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# Canada Anticipates General Tariff Revision

## Protection Being Sought for Book and Writing Papers, Tissues, Etc.—Higher Duties On Foreign Publications Coming Into Dominion Requested—Changes Affecting Paper and Pulp Industry, However, Not Expected to be Very Great—Mersey Paper Co. Makes New Production Record—Fraser Companies Reorganize

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., May 25, 1931—Interest at the moment is shifting to the coming revision of the tariff which it is expected will be a feature of the Dominion Budget to be presented to Parliament around the end of the present month. While changes affecting the pulp and paper industry are not expected to be very great in total effect, they may nevertheless have a more or less important effect, especially on mills producing the finer grades of paper. Added protection is being sought for book and writing papers, tissue and so on, and publishers are demanding higher duties on foreign publications coming into Canada.

When an upward revision of the tariff was made at a special session last September, Premier Bennett promised a complete revision at the next regular session of Parliament. This, it is conceded, is not now possible, but revision on some 300 items is anticipated. The policy will be to increase the tariff consistently throughout the schedules, more particularly in the general tariff, which, by the way, is the one applying to United States products.

The schedules to be dealt with are understood to include magazines and newspapers and paper manufacturers generally with conditions as applying to the latter, Premier Bennett, who is also Finance Minister, is perfectly familiar, he having been prior to assuming the premiership, the principal owner of G. B. Eddy & Co., of Hull, manufacturers of many kinds of pulp and paper products.

### Mersey Hill Doing Well

A new record in production was established in April by the Mersey Paper Company's mill at Liverpool, N. S. Equipped for daily production of 250 tons of news print, the production figures for one day were 284 tons and this was followed by a new high record of 294½ tons made at the middle of the month. Since the opening of the Mersey Paper Company's plant a little over a year ago, approximately 100,000 tons of news print have been produced.

### Fraser Companies' Reorganization Plans

It is understood that it will be a month or more before any announcement can be made of the plans for the reorganization of the Fraser Company. The concern is a large manufacturer of fine paper and other pulp products, as well as one of the largest lumber operators in the Maritime Provinces. The large holdings of lumber constitute a problem in the present unsatisfactory market conditions, but the paper mills are doing good business with progressive reductions of operating costs.

The company's obligations following large loan commitments are heavy, and although interest is still being paid on the mortgages and three-year notes, payments on the debentures were suspended in April. Arrangements for carrying these obligations are now under way, and the belief prevails that readjustments are possible on a basis that will once more place the concern on a strong footing.

### Donnacona Co's. Paper Board

The Donnacona Company, a subsidiary of Price Bros. & Co., has made an arrangement whereby gypsum, lime and alabastine (Canada) will handle the distribution of its new insulating wall board. This is a move of importance to both companies, Donnacona receiving a retail distribution through some 7,000 dealers, while Gypsum, Lime adds what should prove to be a profitable new line to its already long list of products.

The Donnacona's mill for the manufacture of high-grade insulating board was completed early in 1930, and has a capacity of 150,000 square feet per day, or 55 tons. To date domestic sales have exceeded expectations, while foreign sales have been slow but promising.

### Pacific Coast Competition

The markets of paper mills on the Pacific Coast in British Columbia are reported to be gradually extending for news print, and the mills are now reported to be gaining over eastern mills in coarse papers, particularly butcher papers, cheap sulphite bonds, flat writings, mimeograph papers, kraft, bags, tissues and other staples. In converted items as well they have reached a competitive stage and are now getting a full share of the business in waxed papers, transparent wrapping paper, adding machine rolls, and so on.

## Crown Zellerbach Pays Dividend

PORTLAND, Ore., May 23, 1931.—Directors of the Crown Zellerbach Corporation declared dividends of 75 cents per share payable June 1 on preferred stocks series A and B, and recommended to directors of the Crown Willamette Paper Company that a dividend of $1 a share be declared payable July 1 on the first preferred stock of that company.

# Demand for Paper Broadens In Philadelphia

## Fine Paper Mills Are Operating On Slightly Increased Schedules—Book Papers and Cover Grades Show Improvement—Wrapping Paper Moving In Better Volume—Board Mills Producing Converted Fiber and Corrugated Products Are More Active

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., May 25, 1931—While general paper distributors are gaining in sales of hand to mouth type, there is a broader improvement in this class of paper traffic. The wrapping paper division particularly is sharing in this advancing spring demand. While the distributors gain in orders, the manufacturers, though more active, are confining operations to the needs of the day and are not producing in any quantities for future stocking. On the whole, the paper market shows signs of recovery and this is a most gratifying feature, after months of dragginess in demand and discouraging efforts to stimulate sales.

While the distributive trade shows a firming influence, a few of the northern paper mills are making offers in this territory that are attractive in order to gain business. This is true of the wrapping paper makers, who are endeavoring to gain foothold in the Philadelphia territory. Glassine manufacturers report firmer business, owing to the stand taken by such manufacturers as Charles McDowell, of the McDowell Paper Mills, who is holding to the policy of steady valuation, despite keen competition. While the local mills continue to maintain standard prices, a tendency on the part of out-of-town manufacturers to gain orders by making concessions is harmful to the better influence exerted by the city glassine producers and converters of glassine products.

Fine paper manufacturers are operating on slightly increased schedule, as are fancy writing paper mills. Board mills continue to maintain lower output, operating on from three to four days schedule. Seasonal demand for containers aid in the expansion of business for those board mills producing converted fiber and corrugated products. A spurt of buying of building papers, owing to the better weather conditions, has promoted production in the roofing, sheathing and building paper industries. Builders boards are fairly steady. Book papers and cover grades show improvement and extension of operations. The warmer weather has resulted in a revived interest in supplies for soda and ice cream fountains, drug stores, and sanitary paper goods, such as napkins, cups and towels. Other summer paper stocks are moving in larger volume. There is broader ordering of parchments and food wraps as hot weather days are anticipated.

### Effect of Chain Store Decision

Philadelphia paper men are interested in the decision handed down in the Indiana courts on the right of the State to tax chain stores and believe this decision will have far reaching results in the revival of smaller stores and lessen competition from the large corporation chains that have been making inroads on the middle man and small merchants. Heretofore the small merchants and wholesalers have had to pay, while the chain groups have conducted business free of such taxation.

Paper merchants here have suffered from the loss of the small wholesaler trade, particularly in the grocery line, where there are few remaining consumers of paper goods used by this industry. The competition of the chain groceries, and the buying direct from grower and canner, has eliminated much trade from that source, as there are only two or three wholesalers left.

Similar competition in the manufacturing, meat and mercantile fields has caused losses by restriction of paper sales to a few firms where bulk buying prevails or direct purchase from manufacturers of paper, while the local distributor is no longer an important figure in services of paper formerly sold to the smaller firms. Sylvester S. Garrett, who for many years has been linked with the Quaker City trade, and whose ancestors were pioneers in the local industry, states that chain store competition has caused deep inroads on the distributive trade business and the Indiana decision may encourage return of the small wholesalers and other intermediate consumers to their old business.

### National Box Manufacturers Convention

Paper men linked with the supply and machine divisions of the trade will attend the annual convention of the National Paper Box Manufacturers Association, with headquarters in the Liberty Title and Trust Building, this city, at the Wardman Park Hotel, Washington, D. C., to be in session this week from May 27 to 29 inclusive. There will be an exhibition of the supply and machinery trades held in the lobby of the Hotel, with several Philadelphia houses participating. The program of the convention calls for social and business features by the paper supply trades and among them the reporting of the activities of the Glazed and Fancy Paper Committee by Joseph H. Perry, who represented the National Paper Box Manufacturers Association at the meeting held on April 17 at the Kimball Hotel, Springfield, Mass., with John Shuart, of the Springfield Glazed Paper Company, representing the glazed paper industry as chairman of the Supplies Committee.

The standardization rules adopted at this meeting on glazed and fancy papers, will be submitted to the convention for uniform regulation of trade practices and the elimination of abuses and difficulties between box manufacturers and their allies in the paper trade. Among the social features will be a dinner dance with the District of Columbia Paper Manufacturing Company, Washington, D. C., and the Chesapeake Paperboard Company, Baltimore, Md., among those extending the courtesy.

A trip through the plant of the District of Columbia Paper Manufacturing Company will take place on Thursday, with luncheon at the paper mills. Other social features to be part of the Supplies Division will be a golf tournament, sightseeing trips and tours. Among the Philadelphia paper supply trade who will join in the exhibits and participate in the activities are: A. S. Datz & Son, A. M. Collins Manufacturing Company, Charles Beck Paper Company, A. Hartung & Co., Paper Manufacturers Company, Matthias Paper Corporation, Service Paper Company, Philip Rudolph & Son, Shryock Brothers, and the Container Corporation of America.

### Meat Wraps Advanced

Announcement of an advance in the price of the Southland meat wrap kraft of the International Paper Company, was made here last week. This grade of kraft is sold to

the butchers and delicatessen trade and has been advanced from $3.50 to $3.75, effective last week.

**First Cargo From Panama City Mill**

The first boatload of products to be shipped from the Panama City mills of the International Paper Company arrived here last week from that newly opened plant, just completed and placed in operation on St. Andrews Bay, Fla. The first cargo from the Panama City Mills consisted of over 4,000 tons of container board and was shipped via the Moore & MacCormack steamship *Commercial*. The Panama City Mills placed in operation last month the largest and speediest paper making machine in the world with a daily output of 500 tons.

**Pulp Shipments to Philadelphia Increase**

While imports through the Port of Philadelphia showed a general decrease in the past month, a few products in incoming shipments showed an increase and among the three showing more substantial increases were those of wood pulp arrivals. The shipments of wood pulp amounted to 83,827 bales for the month of April 1931, while the same month of 1930 showed 60,741 bales.

**Chesapeake Paper Board Co. Opens Office**

The Chesapeake Paper Board Company, of Baltimore, Md., has opened an office in the Terminal Commerce Building under management of Allen G. Center, to take care of the Philadelphia sales of its line of boards.

**Henry Hudson Huquenele Recovering**

Henry Hudson Huquenele, member of the Huff Paper Company, recently removed to the Terminal Commerce Warehouse Building, at Spring Garden and Delaware Avenue, and one of the oldest wrapping paper and specialty houses in the Philadelphia industry, who has been confined to the Orthopedic Hospital for the past few weeks, is recovering from his illness and expects to leave shortly.

**Groveton Paper Co. Issues New Book**

Attractive sample books, just off the press, are being distributed by the Groveton Paper Company, on the Anaconda Bond, through the Philadelphia representative, Frederick I. Brower, Lafayette Building. The new book shows the white sulphite bond and nine colors. It is being shown by the Anaconda agents in the distributive trade, is the first of new series of bonds, and supplements the book and cover paper lines made in the mills at Groveton, New Hampshire.

**N. A. Considine Re-Elected**

N. A. Considine, president of the Paper House of Pennsylvania, 32 North 6th street, was elected a vice-president of the Philadelphia organization of advertising men last week. Mr. Considine has been re-elected to the vice-presidency of the Poor Richard Club, an office which he had held in that body for several years.

**Repairs to Hemingway Co. Plant**

Repairs to the fire damaged plant of the Hemingway Paper Company, 828-830 North Hancock street, are nearing completion. The plant, which is one of the largest paper stock wholesale warehouses in the city, was destroyed by fire a fortnight ago. The equipment units are being rebuilt while the damage to the paper stock warehouse building, amounting to several thousand dollars, is being repaired. The upper stock house, of which Harry Bailey is proprietor is one of the pioneers of the city, dating back to 1871.

**Charles J. Cohen Co. Rebuilding Plant**

Rebuilding plans of the fire damaged structure of the Charles J. Cohen Company, extensive manufacturers of envelopes, at 500-510 Ludlow street, are in the hands of the contractors, and the quarters are being rebuilt into a modern manufacturing plant. The building was badly damaged by fire which started on the top floor in the envelope making plant and rapidly extended through the storage department, where large quantities of papers and envelopes were destroyed. New units will be added and the plant brought up to date. The envelope company is one of the oldest in the country. It is the intention of the firm, of which Albert J. Cohen is head, to provide for a modern and larger envelope making plant equipped with latest units for speedy and quantity production. The temporary quarters of the firm are located across the way at 507 Ludlow street.

**Westinghouse Mfg. Co. Installs Turbine**

Installation of the turbine made by the Westinghouse Manufacturing Company in the plant of the Lang Paper Company, now located in the old quarters of the Pusey & Jones Company, at Gloucester, N. J., has been completed and the units now ready for operation. The Lang Paper Company has installed two new Badenhauser boilers in its roofing and felt plant and the units are equipped with pulverized fuel equipment. The Westinghouse company has installed the 5000 k.w. double automatic Bleeder type turbine which supplies steam under two different working pressures. The work of installation was conducted under the direction of A. M. Cooper, manager of the Philadelphia paper mill division offices of the Westinghouse Electric and Manufacturing Company.

**Allen E. Whiting In West**

Allen E. Whiting, president of the Whiting Patterson Paper Company, 320 North 13th street, accompanied by his son, John Robb Whiting, is visiting with friends on a Ranch in Montana, where he will remain for several weeks.

**Hugh Cline Jr. Introduced**

Trade congratulations are extended to Sales Manager Hugh Cline, of the Saxe Paper Company, 320 Race street, on the arrival of Hugh Jr., who is the first born.

## Champion Coated Reelects Officers

DAYTON, Ohio, May 25, 1931.—Announcement was on May 15 that all officers and directors of the Champion Coated Paper Company at Hamilton, have been reelected.

The officers are:—Peter G. Thomson, president; Walter D. Randall, vice-president and mill manager; Alexander Thomson, vice-president and manager of sales, and Logan G. Thomson, secretary-treasurer.

The company did not issue a statement of earnings. The firm conducts the largest single plant for the making of coated and uncoated paper in the industry and has been making many substantial improvements during the past 18 months. Each year hundreds of paper and technical men from all sections of the country visit the Champion mills and are shown through the plant by special guides.

The mills have an up-to-date safety department in which every interest of the employe is guarded from the moment he enters the employ of the company. Accidents are reduced to a minimum, safety appliances of the most modern type having been installed.

## R. F. Engelhardt Resigns

R. F. Engelhardt has resigned his position as Superintendent of the Skaneateles Division of The Oswego Falls Corporation, effective June 1.

Mr. Engelhardt has been associated with the Oswego Falls Corporation for the past three years and has a very successful record. His plans for the future are not known.

# Safety Conference Convenes At Fond du Lac

## More Than One Thousand Persons Attend Annual Gathering of Fox River Valley and Lake Shore Safety Divisions—Several Important Addresses Presented Before Paper and Pulp Section, Followed By Spirited Discussions of Mill Problems

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., May 25, 1931.—Safety activities were again brought to the front among paper mills of the Fox River Valley and other industries last week when the annual gathering of the Fox River Valley and Lake Shore Safety Conference was held at Fond du Lac, Wis. The attendance was more than 1,000.

In the paper and pulp section, R. G. Knutzen, of the Wisconsin Industrial Commission, acted as chairman. Several addresses were given, followed by a discussion of mill problems. F. J. Connor, welfare superintendent of E. I. Du Pont de Nemours Company, Pennsgrove, N. J., spoke on "The Foreman as a Safety Factor in Production." Another speaker was J. J. Plzak, safety director of the Consolidated Water Power and Paper Company, Wisconsin Rapids, subject, "Why Safety Must Be Part of Our Daily Tasks." A third address was given by J. V. O'Neil, supervising engineer of the Travelers Insurance Company. He dealt with many of the factors contributing to accidents.

General sessions were held at which Fred W. Sargent, president of the Chicago and Northwestern Railway, spoke on the economic value of safety as recorded in twenty years of expeience in his company. Intensive educational methods are necessary, he said, and also emphasized the hazard of the use of liquor. Prof. William Bacon Bailey, of Hartford, Conn., formerly an economist of Yale University, also made an address showing what safety promotion had meant to industries all over the country. A safety parade was held at the close of the day.

### New Wood Room Completed at Biron Mill

Construction of the new wood room at the Biron mill of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., has been completed and the building is now in use. The most modern types of chippers and grinders have been installed, greatly increasing the capacity. The basement houses the barker and refuse conveyor, and on the main floor are two drums of ten to fifteen cords per hour capacity, four conveyors, one knot saw, a trimmer, a splitter, an automatic saw filer, wood showers, summer and winter slashers and a submerging conveyor. The top floor contains twelve ground wood and two sulphite deckers, an American filter and two gravity tanks for size storage. As has been the policy of the company with all its new buildings, the exterior architecture is highly attractive, making the building look like a civic structure rather than a mill. The company also has completed a large addition to its principal offices.

### Wisconsin National Forests Dedicated

Ceremonies were held at Rhinelander, Wis., last week dedicating the newly established Argonne National Forest, covering a large area in Oneida, Forest and Vilas Counties. A large public gathering was held at which speakers extolled the movement to preserve the timber for the future use of the public and of Wisconsin's industries. E. W. Tinker, federal forester for Wisconsin, outlined the aims of the government to carry on for the future the development of thousands of acres where new timber would be grown. The development will proceed simultaneously, he said, with the establishment of forest fire protection so none of the work will be lost by this devastation so frequent in the past. Rhinelander is one of the important centers of paper manufacture in Wisconsin.

Another dedication program took place in the western part of the state, where the Flambeau forest unit has been established. The unit covers an area 18 miles long and 12 miles wide. More than 1,000 trees were planted as a part of the ceremonies. Mr. Tinker also made an address there complimenting the people of that vicnity for their interest in forest preservation.

### News of the Industry

Under a bill now in the legislature, a total of $1,200,000 will be raised in Wisconsin annually for forest crop land work. The bill increases the mill tax for forest crop plans from 1/20 of a mill to 2/10 of a mill. An amendment bringing the total to these figures has been adopted by the state assembly, but the bill itself has not been up for final vote. A joint resolution also has been adopted authorizing the use of state highway forces and equipment to fight fires.

Most of the dredging work has been completed for the new government dam to be constructed at Kaukauna, Wis. The old wooden structure has been removed completely and coffer dams will soon be in place so the concrete can be poured for abutments. The dam will be 600 feet long and will cost approximately $135,000.

George W. Mead, president of the Consolidated Water Power and Paper Company, was re-elected vice president of the Wisconsin Interdenominational Commission on Industrial Relations, at a meeting last week at Wisconsin Rapids, Wis. The commission discussed present labor conditions and recommends a five-day week as a means of increasing the amount of employment. Recommendations also were made to industry to maintain present wage scales as an assurance of more favorable conditions among the laboring classes.

Paper mills in and near Green Bay, Wis., received 20,250 tons of domestic pulp by boat during the last year, according to shipping statistics compiled at the port. The value was placed at $97,200. The mills also imported nine shiploads containing 20,468 tons of foreign pulp valued at $416,200. The shipments were approximately the same in amount as those of 1929.

A device has been invented by Leo Gurney, a machine tender at the Stevens Point, Wis., mill of the Consolidated Water Power and Paper Company, which sets slitters accurately and quickly, and without the hazards of the old system. A rule operated by cogs comes into position from beneath the slitter boards by the turn of a wheel, showing exactly the position of the slitters. It does away with the use of a yard stick and the possibility of offsetting when the position is not perfect.

Friction of a motor belt caused a fire in one of the penthouses of the Riverside Fibre and Paper Company's mill at Appleton, Wis., last week and caused damage of about $500. The flames had spread to the roof of the mill but were checked before much damage could be done outside of the penthouse.

# Chicago Paper Market Only Moderately Active

## Demand for Book Papers Slow, With Most Manufacturers Operating On Five Day Schedules—Cover Papers Going Forward In Fairly Satisfactory Volume—Some Improvement Noticed In Request for Kraft—Paper Board Situation Slightly Better

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., May 23, 1931.—Slow going is reported in the Chicago paper market this week. "Only fair" characterizes the most exuberant of the reports while "very poor" comes from some of these interviewed. The consensus of opinion, however, is that rock bottom has been reached as far as the paper business is concerned. In the news print market, sentiment has calmed down a bit and representatives are philosophically going ahead with prospects for June at least as good as for May. Some of the ground wood mills are running three and four days a week—including a few that have been operating at full schedule for many years. This condition is expected to improve in a short time.

The board market is slightly better than last week, say reports. Book business is reported slow, with a number of mills on a five day week schedule. Cover papers are fair. In the fine papers, rag contents are the best of the lot with sulphite bonds less active. Some price fluctuations are noted in tissues but an improvement is noted in volume. The Chicago kraft market is firming up with each succeeding week and kraft dealers in Chicago are slowly working out their problems. There is much improvement in sentiment and otherwise over reports of a few weeks ago. The waste paper divisions are reported inactive with no price changes of note.

### Karl Becker Joins Salesmen's Association

Karl H. Becker, of the George W. Wheelright Paper Company, with offices at 310 South Michigan Avenue, Chicago, is the latest acquisition to the membership fold of the Middle Western Division of the Salesmen's Association of the Paper Industry. His membership, it is understood, was secured by Jim Coy, demon chairman of the membership committees.

The Monday, May 11, program of the Middle Western division was not featured by any speaking talent and discussions centered around business conditions and handicaps for the first golf tournament of the year which is scheduled for the Wilmette Golf Club, Friday, May 22.

The golf arrangements are made by Harry Johnson, of the Brown Company, chairman. The May 18 meeting of the Divsion is to have Phil Howard, of the *American Paper Merchant* as the guest speaker. Mr. Howard is expected to talk on phases of selling paper of all kinds and grades.

Frank Prentiss, of Hollingsworth & Whitney, was the speaker on the regular Monday, May 4, program. Mr. Prentiss lived up to the reputation established by other speakers on the series of programs and presented samples of his company's products, detailed the nature of the products, some of the merchandising program, and future prospects.

### New Terminal to Benefit Paper Industry

The opening of the barge line terminal at Peoria in June is expected to prove beneficial to many manufacturers, including a number of paper firms, in the second largest Illinois city. The terminal will make possible an extended use of the waterway to New Orleans. One paper manufacturer estimated that products he gets in New Orleans can be shipped by way of the waterway to the Peoria terminal at a savings of between $5,000 and $6,000 annually, because of the lower tonnage costs. He also estimates that another product used in paper making, and coming from an even further distance, can be brought in through the Gulf and up to Peoria at a savings to him of approximately $10,000 annually. Chicago is also going ahead with terminal plans which should result in like savings to manufacturers in this center.

### Isaac Sandroff Dead

Isaac Sandroff, pioneer paper stock dealer, and well known leader in Chicago Jewish philanthropies, died on May 17 at his home, 622 Waveland Avenue, Chicago. He was 57 years of age. One of the first to engage in the paper stock business here, Mr. Sandroff founded the Continental Paper Grading Company at 1451 South Peoria street, over three decades ago, and continued as its active head until he became ill. He is survived by a son and three married daughters. His wife died several years ago. Funeral services were held on May 19 from 3125 West Roosevelt Road.

### Paperboard Industries Association Meets

The May meeting of the Paperboard Industries Association was held on May 20 and 21 at French Lick Springs, Indiana. All meetings took place in the famous French Lick Springs Hotel. The meeting, staged conveniently near to Chicago, drew quite a large delegation from this city—the members of the association being firmly convinced that now, if ever, trade organizations have a definite job to do in the interests of each individual member organization. The folding box, container, and paperboard groups, met on May 20, with the container group holding a second meeting on the following day. The general meeting of the three groups in joint session was also held on May 21, the meeting being followed by a mass meeting of the paperboard and container groups. President J. H. Macleod presided at the general meeting of the three groups, a most important discussion on trade practices and on methods of extending consumption of these products.

### News of the Trade

"Sensational" folding enamel is described in the newest Birmingham & Prosser mailing piece, which includes a four page folder and an insert with prices for tons, cases and reams attached. The mailing is printed on Sensational folding enamel, 80 pound, high finish. The copy, featured by one black and white illustration and by two four color illustrations, speaks of "strength, receptive printing surface and modernity." Sensational folder is also described as a companion line to the popular Peacock folding enamel.

A very clever advertising piece is the latest sales message on Hollingsworth Basic bond, made by Hollingsworth & Whitney. The mailing is the first of a series on Basic fables. It deals with the "Camel Who Stubbed His Toe." The Aesoprogram—"Imitation defeats its own purpose," is forcefully presented in the copy, telling of this newcomer to the field of high grade sulphite bonds. It comes in twelve colors and white—all standard sizes and weights.

Number 31 of the series of "Rags in Paper," published by the Rag Content Paper Manufacturers, brings to Chicago buyers a concise and interesting discussion of "Why The Best Papers Are Made From Rags."

# New England Paper Business Is More Buoyant

## Sales of Practically All Standard Grades of Paper Have Increased In Volume Since Beginning of Year—Improvement In Cotton and Shoe Industries and Brighter Employment Situation, Results In More Optimistic Feeling In Industry

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., May 25, 1931.—With slightly more activity in business as a whole, particularly in New England, it is estimated that since the first of the year, sales of paper of all kinds have gradually increased in volume. Some of this is seasonal, with greater use of paper for recreational advertising, but some may be attributed to improvement in a number of lines. While printers are placing larger orders for paper, industries have needed larger supplies.

The employment situation in New England has improved to some extent, so that department store sales have increased, undoubtedly on account of the greater buying power of the public. This condition has called for more wrapping paper. With a continued betterment in the shoe business, there has been a greater demand for papers used in this business. Another outlet is the cotton textile industry, whose improvement is sustained and increasing.

The box board market is hardly better than fair, as a whole, but the demand for material for shoe cartons continues. Values are at the same levels, except that single manila lined chip is quotable at $42.50, compared with a previous figure of $45.00.

Specialties in paper and box board are reported to be moving rather well, particularly those used in the summer season. Betterment in the textile industry has also brought about an increased demand for some specialties.

Considerable paper stock, it is stated, is being sold at a sacrifice, but there is little market, if any, at the prices being generally asked. As imported sulphite can be bought at 3 cents, there is less demand for rags and paper. Some prices are below the normal pre-war quotations, when costs and labor are considered. Two certain grades of stock, which are wanted, cannot be found readily because the price is so low dealers do not care to handle them. These grades are wastes from other waste. Prices generally are unchanged.

### New England Paper Men Hold Outing

About 35 members of the New England Paper Merchants Association, representing fifteen houses, thoroughly enjoyed the outing of the association last Tuesday at the Wachusett Country Club, West Boylston, Mass. Among places represented were Boston, Hartford, New Haven, Providence and Springfield. In a business meeting, at which President Floyd E. Blackman presided, Percy D. Wells, of Boston, was elected a member of the association. A vote was taken in favor of having the association join the New England Council.

In the golf tournament, in which many members entered, Richard Anderson, of Springfield, won the low gross prize, in 89. Floyd E. Blackman won the kickers' handicap with 102, having a handicap of 26, making a net of 76. Among those present was Secretary Arthur Chamberlain, of the National Paper Trade Association of the United States.

### News of the Trade

The meeting and dinner in connection with the outing of Boston Paper Trade Association is to be held at the Hotel Preston, Beach Bluffs, Mass., Monday, June 8, and the outing itself at the Salem Gold Club, Tuesday, June 9.

The Baird & Bartlett Company, box board dealers, have added to their lines an inner sole and counter board department, which is handled by Charles H. Bell.

John Carter & Co., Inc., are to distribute the new line of Rockledge Bond, manufactured by the Millers Falls Paper Company, Millers Falls, Mass.

The New York-New England Company, have just put on the market two new papers, Snow-Flake and Woodbine, suitable for box purposes, and distributed by Henry L. Goodman. The New York-New England Company are removing to a building partly occupied by the Advertisers Paper Mills, Holyoke. They expect to be completely established within the next ten days. There has been no interruption of service during the removal. Their former address was 76 Ely street.

Knight, Allen & Clark, Inc., are stocking a new line, American Egg Shell Text, made by the American Writing Paper Company. The sample book has just been issued.

Percy D. Wells is handling a new line, Hornet Linen Bond, a 100 per cent pure white rag, one of the whitest and highest grade papers made. Mr. Wells is also handling the Dennison Manufacturing Company's gummed papers.

W. L. Chadwick, director of sales of the United Paperboard Company, New York, and Max Zimmerman, manager of manufacturing at the New York office, were recently at the Boston office of the company.

H. L. Brown, cashier at the Fairfield (Me.) Division of the United Paperboard Company, is to solicit the folding and set-up box trade in Maine for his company, beginning June 1.

E. Davey Dodd, of the Davey Company, Jersey City, recently called on the Boston trade.

The American Writing Paper Company, which has a Boston office, has just issued a sample book of Herculean Cover.

Blair B. Stringfellow, Jr., New England representative of the Albemarle Paper Manufacturing Company, Richmond, Va., is recovering from a major operation and expects to return from Richmond to the Boston office by the middle of June.

The John A. Dunn Corporation, Ashland, Mass., has been incorporated to manufacture articles made of wood, steel, iron and paper. There are 950 common shares without par value. Incorporators are John A. Dunn, 19 Aberdeen street, Wellesley, Mass., president and treasurer, Mary B. Dunn and Mildred G. Gohery.

The Morris Roofing Company, Springfield, Mass., has been incorporated to deal in roofing, with a capitalization of $50,000. There are 500 shares of $100 each. The president is Morris Katz; vice-president, Samuel Katz, and treasurer, Morris Katz, 20 Alsace street, Springfield.

Charles W. Baker and Morris Winooka, envelope manufacturers, doing business as Universal Envelope Company, have filed a voluntary petition in bankruptcy. Liabilities are given as $1,794. There are no assets.

A meeting of the senior group of salesmen of Storrs & Bement Company was held at the office of the company, recently, with President William N. Stetson, Jr., presiding. General Manager John H. Brewer gave a talk.

Clifford H. Haines, New England representative of the Fort Howard Paper Company, manufacturers of toilet rolls and tissue, has taken an office at Room 926, Chamber of Commerce Building.

# A new Complexion

**Users of super-calendered book papers, always touchy on the matter of specks, are now finding that one of their old standbys has a new complexion. ¶ In price this paper is in line with the other leaders in the field. But it is *much cleaner*. Users notice a sharp reduction in the number of specks. ¶ This cleaner, whiter sheet is made from Centrifined stock. Always a good value, it is now a real bargain—and buyers can't be expected to neglect it. ¶ Let us show you how it will pay you to install your Centrifiners now—before Centrifining becomes universal.**

BIRD MACHINE COMPANY

SOUTH WALPOLE, MASSACHUSETTS

manufacturers of the Bird Centrifiner under license from the Centrifugal Engineering & Patents Corp., owners of the Erkensator Patents.

## BIRD CENTRIFINERS

4813

## New York Trade Jottings

William F. Weinphal, recently with the Siegbert Book-Cloth Corporation, has joined the sales forces of Quincy P. Emery, Inc., general paper merchants, of 280 Madison Avenue, New York.

* * *

Allied Paper Mills, Inc., are now installed in their new offices at 230 Park Avenue, New York. The warehouse continues to be operated at the old address, 471-473 11th Avenue, New York.

* * *

Oriental Paper Company, Brooklyn, N. Y., has been incorporated under the laws of the State of New York, with a capital stock of $20,000. A. E. Dubroff, 429 Miller Avenue, New York, is the attorney.

* * *

Wilson Paper Stock Company, Inc., of 452 West 19th street, has been awarded the contract, for a period of five years, for the removal of all waste paper from the new Empire State Building, the largest office structure in the world.

* * *

Collins Manufacturing Company, of North Wilbraham, Mass., have appointed the Blake-Butler Paper Company, Inc., of 225 Varick street, New York, agents for their fine rag content ledger papers, Arkwright Ledger and Eminent Ledger.

* * *

Net income of International Paper and Power Company, New York, and subsidiaries for quarter ended March 31, 1931, was $1,400,116 after charges, federal taxes, minority interest, etc., compared with $670,054 in first quarter of 1930.

* * *

Lily Tulip Cup Corporation, New York, has declared the regular quarterly dividends of 37½ cents on the common and $1.75 on the preferred stocks. Common dividend is payable June 15 to stock of record June 5 and the preferred, June 30 and June 5, respectively.

* * *

Announcement has been made of the formation of the Export Fiber Board Case Association, composed of the leading manufacturers in that industry, with headquarters at 15 Moore street. The purpose of the organization, it is stated, is to foster the use and acceptance of fiber board shipping cases in the export trade. H. L. Stillwell, well known in the trade, has been appointed managing director of the association.

* * *

Hunnel-Ross Fibre Corporation, manufacturers of all sulphate pulp kraft paper and board, announce the addition to its sales organization of C. R. Nutter, who has been affiliated with the kraft industry for a great many years past. Mr. Nutter will make his headquarters in the branch sales office at 450 4th Avenue, New York, and will devote his time to the Metropolitan New York territory and New England.

* * *

It is expected that a meeting will shortly be called in New York City for the purpose of organizing the first chapter of the Waste Paper Institute. Since the merging of the Waste Paper Division of the National Association of Waste Material Dealers and the Waste Paper Institute, there have been brought into the Institute practically all important factors represented in the New York Waste Paper Industry and it is believed that a New York Chapter, holding regular meetings at frequent intervals, can accomplish much for the benefit of members located in that city.

* * *

Fred Messner, of the Brookmire Economic Service, was the guest speaker at the regular weekly luncheon and meeting of the Eastern Division of the Salesmen's Association of the Paper Industry on Tuesday at George's Restaurant, New York. Mr. Messner gave in detail the reasons of his organization for feeling that although there are some difficulties to be overcome, the correct point of view at the present time is one of mild optimism, and that business is about to start an improvement which will probably continue at least for the next year, or year and a half.

* * *

A very interesting conference was held at the headquarters of the Waste Paper Institute, Times Building, New York, on Friday, May 15, by committees representing the Paperboard Industries Association and the Waste Paper Institute. While there have been previous conferences between local associations and groups of consumers, the conference held on the 15th was the first one conducted by both national organizations representing the respective industries. H. D. Schmidt, vice-president of the Paperboard Industries Association, acted as chairman of the committee representing the Paperboard Industries Association and William J. McGarity acted as chairman of the Waste Paper Institute committee. The committees which met on the 15th were drawn from the East, and on May 28th in Chicago there will be a similar conference by committees made up of Western members of the Paperboard Industries Association and Western members of the Waste Paper Institute. The committee representing the Paperboard Industries Association made it clear that they recognized the Class A, or first class waste paper packer, as a necessary factor in the industry. They also assured the committee representing the Waste Paper Institute of their willingness to confer at any time with the Institute upon request, covering any subject not illegal or economically unsound. The conference afforded an opportunity for the waste paper packers and dealers to discuss with the committee representing the board manufacturers many of the problems with which they have been faced, particularly during the past year or two, and it is hoped that as a result of the conferences already arranged for and others which may be held in the future, there may be developed a fuller appreciation by both consumer and packer of the problems with which each is faced.

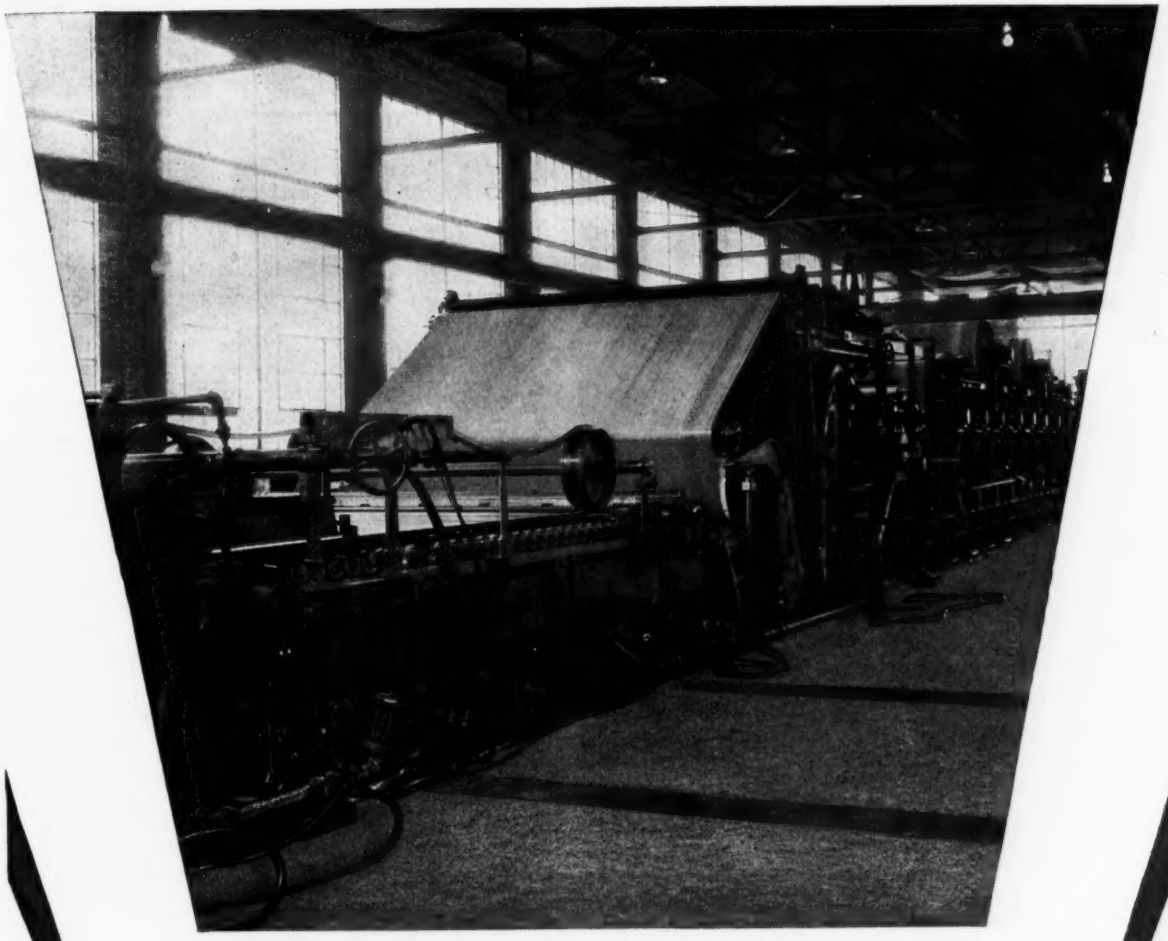
## Dard Hunter Honored

Dard Hunter, president of Dard Hunter Associates, of Lime Rock, Conn., has been awarded the gold medal of the American Institute of Graphic Arts. The award was made last week at the institute, 65 East 56th street, New York, "in recognition of his many contributions to the art of the book."

Five books, which, except for the binding, have been entirely the products of his own hands and brain, have been published by Mr. Hunter in the last sixteen years. He has made the paper by hand, designed it, cast the type, set it and used it for printing manuscripts of his own writing. The books, limited in editions to 200 or fewer, have been in great demand by collectors.

Mr. Hunter, who is considered an authority on the history of papermaking, announced that after the completion of a book on which he is now engaged, he will go to the South Sea Islands, leaving behind all the tools of civilization, and make a book exclusively from materials provided by nature.

# DOWNINGTOWN



## SIMPLIFIED REMOVABLE ···FOURDRINIER···

No obstructions in machine aisle. No portable stands or rails to place in position before removing the wire part. This simplified design of the Downingtown Fourdrinier saves time and labor at the A. E. Adams Paper Co., Baldwinsville, Mass. The rails, on which the machine rolls for changing wires, are permanently located in the floor beneath removable cover plates, which are flush with the floor level. Our Catalog No. 101 completely describes the features of the modern Downingtown Fourdrinier and contains a layout of a complete machine. Write for it now. The Downingtown Manufacturing Co., Downingtown, Pennsylvania.

# CONSTRUCTION NEWS

*A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills*

## Construction News

**Mount Holly Springs, Pa.**—The Holly Glen Paper Mill, Mount Holly Springs, has been acquired by new interests, which have also secured other assets of the company, and the plant will be placed in operation at an early date. Plans under way for alterations and improvement, including equipment repairs and replacements. It is proposed to provide facilities for the employment of about 60 men.

**Tarentum, Pa.**—The Tarentum Paper Mills, of Tarentum, Pa., manufacturers of rope, jute, kraft and colored specialities, are planning to rebuild their boiler plant and will shortly install new stokers and a new thermo-generator. The entire plant is to be completely electrified. The work is to be completed by next Fall.

**Cornwall, N. Y.**—The Salisbury Paper Products Corporation, Cornwall, recently organized with a capital of $150,000, is said to be arranging to take over mill property at Salisbury Mills, Orange County, and will operate a plant at that place for a line of paper goods. The new organization is headed by Laurence A. Barry, Jr. and William H. Malone, both of Salisbury Mills and William H. Mahoney, 14 Van Reypen Street, Jersey City, N. J., Bernard A. Gannon of Jersey City, N. J., and Solomon Fanaroff, Sharon Springs, N. Y.

**Kimberly, Wis.**—The Kimberly-Clark Corporation, Neenah, Wis., has completed plans for the installation of a new underground piping system for sprinkler system at its mill at Kimberly, estimated to cost about $25,000. General contract has been let to the Fluts Brothers Construction Company, 48 Otter street, Oshkosh, Wis., and work will be placed under way at once. Company engineering department and stock.

**International Falls, Minn.**—Receivers for the Minnesota & Ontario Paper Company, International Falls, are holding to a production schedule at the local mill, and it is understood that this will be continued without change for an indefinite period. In connection with the mill of the Great Lakes Paper Company, Ltd., Fort Williams, Ont., an affiliated interest, it is proposed to maintain an operating basis of five days a week until further notice. The latter plant is given over to the production of news print.

**Bristol, Va.**—The Columbian Paper Company, Buena Vista, Va., has work under way on a new boiler plant at its local mill, one-story, 42x85 feet, and proposes to have the unit ready for service at an early date. It will represent an investment of about $60,000 with equipment. The W. E. Biggs Engineering Company, Halston Bank Building, Knoxville, Tenn., is engineer in charge.

**Emeryville, Cal.**—In connection with an expansion program at its mill at Emeryville, announced in these columns last week, the Paraffine Companies, Inc., 475 Brannon street, San Francisco, Cal., proposed to expand operations abroad. The company has recently organized a subsidiary under the name of Pabco Products, Ltd., with headquarters at London, England, to handle the distribution of its products in that country, as well as other foreign points. The company recently arranged for a note issue of $1,500,000, a portion to be used for expansion abroad.

**Seattle, Wash.**—The Portland Canal Power Company, Exchange Building, Seattle, Willis T. Batcheller, president, has secured permission from the Federal Power Commission, to proceed with its hydroelectric power project on the Davis river, Alaska, site of the Portland Canal, near Hyder, Alaska. It is understood that a large part of the plant output will be used for paper mill service in the district noted. The project will consist of two waterwheel generating units, operating under a head of 350 feet, with transmission lines and power substations and is reported to cost more than $2,000,000.

**Thorold, Ont.**—The Ontario Paper Company, Allenburg road, Thorold, has plans in progress for extensions and improvements at its local mill, including the construction of a new two-story unit, about 50x150 feet, to provide for considerable increase in present output. Improvements will also be made in present plant equipment. The entire project is reported to cost over $350,000. John Stadler, 1117 St. Catharine street, West, Montreal, Que., is engineer in charge.

**West DePere, Wis.**—The DePere Paper Company, Fort Howard avenue, is planning the early rebuilding of portion of local mill, destroyed by fire on May 5, with loss reported in excess of $85,000, including buildings, equipment and stock.

**New York, N. Y.**—The George & Sherard Paper Company, Wellsburg, W. Va., a West Virginia corporation, has filed notice of organization to operate in New York with a capital of $100,000. The company is affiliated with the International Paper Company, 220 East Forty-second street, New York.

**Weehawken, N. J.**—Palm, Fechteler & Co., 15 East 26th street, New York, manufacturer of decalcomania paper products, with plant at 85-99 Maple street, Weehawken, has arranged for a bond issue of $100,000, for general financing and expansion in operations.

### New Companies

**Chicago, Ill.**—The Olympus Paper Company, Inc., 1428 West Van Buren street, has been incorporated with a capital of $5,000, to manufacture and deal in paper products. The incorporators are Peter V. and Spiros V. Matsoukas.

**Portsmouth, Va.**—The Virginia Stationery and Office Supply Company, has been organized to deal in commercial paper stocks and other paper goods. J. Armstead Carter, 2905 Gosnold avenue, Norfolk, Va., heads the company.

. . . and again on the Pacific coast!

# ROSS SYSTEMS AT Powell River

With the recent addition of its seventh paper machine along with other extensions and improvements, the Powell River Company, Ltd., is now probably the largest single enterprise on the Pacific Coast. In their latest development, Ross equipment was again selected for the heating and ventilating—to provide the same character of satisfactory service secured from the previous installations of ROSS SYSTEMS at Powell River. What stronger proof of the dependability of Ross equipment than the continued confidence of the industry's most prominent leaders, such as Powell River in British Columbia? Only an impressive record of results could justify repeat orders from companies of this character.

❖ ❖ ❖ ❖ ❖

You can get the benefit of the long specialized experience possessed by Ross engineers in helping you to solve your heating, ventilating, drying and conditioning problem of any nature. For smallest as well as largest items of equipment you can rely on Ross service to provide maximum efficiency and economy.

**Ross Equipment Supplied For Powell River Company's Most Recent Addition**

Complete heating and ventilating equipment including Ross-Briner Economizers for new 226 inch No. 7 machine.

A Ross-Grewin System for removing vapor from the pockets of No. 7 machine.

Heating and Ventilating System for the Beater Room.

Heating System for the Grinder Room.

Calender Blowers for cooling the calender rolls.

## J. O. ROSS ENGINEERING CORPORATION

201 No. Wells Street CHICAGO

Main Office—122 East 42nd Street NEW YORK

311 Lewis Building PORTLAND, ORE.

ROSS ENGINEERING OF CANADA, LIMITED

New Birks Bldg., MONTREAL

ROSS SYSTEMS

HEATING—VENTILATING—DRYING

# POWER PLANT SECTION

## REDUCING POWER COSTS THROUGH UNIT TREATMENT

*Conducted by* **Reginald Trautschold Consulting Engineer**

# Good Steam Trap Practice Pays

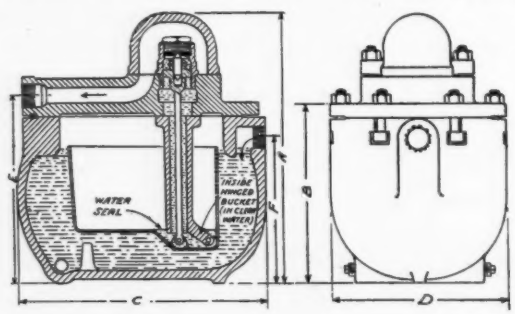
### Select Trap Equipment to Suit Operating Conditions

It has been claimed on excellent authority that good steam trap practice always brings satisfactory results, a statement which is interpreted as meaning that satisfactory steam trap service invariably pays. This is perfectly true, but so also is the fact that quite unsatisfactory results are often secured with excellent trap equipment incorrectly used. In fact and in substantiation of the claim for satisfactory results, some of the most marked improvements realized in mill operation have been effected in major part by the correction of some fault in trap service. A relatively nominal sum expended for suitable trap equipment properly installed has often made possible the effective operation of apparatus which had been functioning inefficiently.

Experience of this nature is not limited to the mills of the paper making industry, it is perfectly true, but it has been quite prevalent in plants of pulp and paper mills, for the reason, doubtless, that the conditions under which the traps have to serve differ widely even in the same mill. A trap installed to drain condensate from a steam heated drier meets very different conditions, for example, from those with which a steam purifier drainage trap has to contend. The same type of steam trap, obviously, would not be well suited for both services. Lack of adequate trap capacity is also a common failing and one which is very much more general than is commonly realized.

#### Classification of Steam Traps

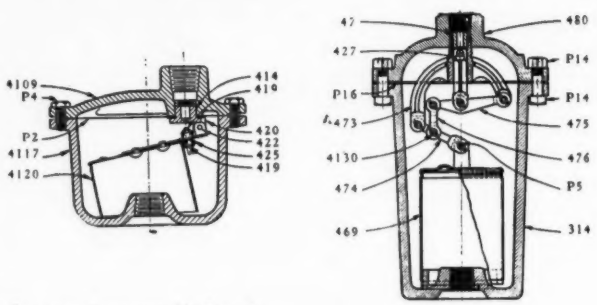
Before attempting any consideration of steam traps from the point of view of their suitability for individual and distinctive trap services, however, it will be well to refer briefly to the classified groups into which modern, commercial and special, steam traps may be divided. So grouped, the various types may be referred to as units representative of the operating principles they employ, instead of simply by their constructional details.




*Courtesy: The Swartwout Co.*

FIG. 1

**Hinged bucket steam trap suitable for high pressure and moderate capacity requirements.**




*Courtesy: Armstrong Machine Co.*

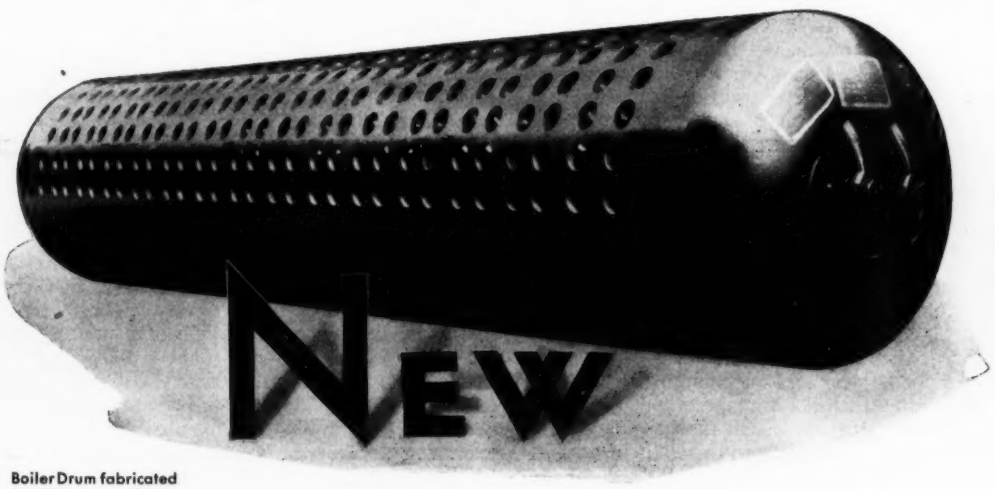
FIG. 2

**Types of steam traps employing inverted buckets.**

The first and very logical division is between non-return and return traps, the former being distinguished by having a higher inlet pressure than the pressure against which they discharge. Return traps, also known as lifting or vacuum traps, are those which discharge against a higher pressure than that of admission to the trap and require, consequently, an auxiliary steam or air supply to provide the actuating force for trap discharge. These latter traps are employed for the most part only in connection with condensing operation of prime movers, etc. and in services where steam is exhausted at less than atmospheric pressure.

Non-return traps are used in virtually all mill operations entailing the use of process steam, of course, and in power house services in the majority of plants, those operated non-condensingly. With the advent of the modern high pressure boiler plant, however, return traps are being used in some of the more advanced plants, where the exhaust from the power units is not diverted from the closed cycle of steam generation, and these will be taken up in a subsequent discussion.

Steam traps may also be classified conveniently according to their principles of operation, as mechanically or thermostatically actuated devices. The mechanical traps of more general interest are actuated by the weight or pressure of the condensate they entrap and may be classified




Boiler Drum fabricated for The Brown Paper Mill, Incorporated, of Munroe, Louisiana. This drum is 36″ I. D., 16′ long and is designed for 207 lbs. per sq. in. working pressure. It is insured by the Hartford Steam Boiler Inspection and Insurance Company.

# Fusion Welded Power-Boiler Drum

The illustration above shows the latest development in power boilers. All seams of this drum were welded by the new Babcock & Wilcox process which consistently produces welds equal to or better than A. S. M. E. boiler plate in tensile strength, ductility, shock resistance, and ability to withstand repeated applications of pressure.

To provide definite proof of the soundness of the welds in this drum every inch of every seam has been explored with a powerful X-Ray machine.

The Company's bulletin *Fusion Welding* describes in detail the characteristics of welds produced by this new technique and shows the tests employed to check the soundness of welds in finished products. Copies of this publication will be supplied upon request . . . simply ask for Bulletin S-10.

In addition to this book, The Babcock & Wilcox Company will send, without obligation, a set of articles on fusion welding written by leading writers for the technical press.

Pending action on the proposed A. S. M. E. Code for welded boiler drums The Babcock & Wilcox Company offers this construction only in Non-Code States and subject to the appoval of the boiler insurance companies.

THE
BABCOCK & WILCOX
COMPANY

85 LIBERTY ST. NEW YORK, N. Y.

G1

further as bucket, float, tilting and piston type traps. Thermostatic traps are quite different in that they are actuated by a metallic element which utilizes the differential expansion and contraction of two metals to operate the trap, or effect such operation by means of a bellows device filled with a liquid or gas susceptible to slight variations in temperature. These traps depending upon thermal expansion and contraction open at a set temperature and remain open until the temperature condition within the trap has increased sufficiently to cause the expanding element to close the discharge valve of the device.

In the case of mechanical steam traps, the variety with which pulp and paper mills are most concerned, the question of temperature is not a factor in the operation of the devices. The bucket, tilting and piston type traps discharge intermittently, remaining closed while the condensate accumulates and the actuating pressure builds up, when the discharge valve opens wide and the trap rids itself of the entrapped water and such impurities as may be present. As soon as this has been accomplished, these traps close and remain shut until such time as the weight of the entrapped condensate suffices to cause them to open and discharge again. In the case of the float type steam trap, on the other hand, the discharge is more or less continuous, for the discharge port rarely remains closed for any appreciable period once the trap is in actual operating service. The discharge port is usually partially open, the degree of opening depending upon and varying with the depth of the condensate in the trap. Theoretically, at least, these traps discharge at a rate commensurate with that at which the condensate enters the trap, the water level within the trap remaining substantially constant.

**Suitability of Non-Return Steam Traps**

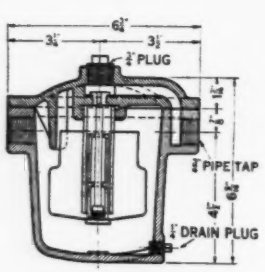
The suitability of any of these non-return steam traps is governed to a considerable extent by the inherent characteristics of the various types, or varieties, and the trend at the present time is decidedly toward the use of bucket traps for high pressure services which call for only moderate trap capacity; the use of float traps for low pressure services requiring large trap discharge capacity; and piston operated traps for high pressure and large capacity duty. There are well justified exceptions to these class applications, of course, modifications and combinations which are hard to reconcile to such practices, but as a general rule these typical applications are considered most suitable.

In selecting any type of steam trap, however, the capacity of the trap is a consideration of outstanding importance, for while it is not advisable to install traps larger than required, not only on account of the question of cost, but because of decreased trap efficiency, it is almost certain to be much more expensive to install a trap of inadequate capacity. The wise choice is a trap with sufficient capacity to discharge the heaviest rush of condensate reasonably to be expected, a volume which is quite usually several times the quantity of condensate handled under normal working conditions.

The ultimate discharge capacity of a steam trap is determined by the size of the valve orifice, or port, and by the pressure differential acting upon the orifice. This effective pressure is the difference between the inlet pressure on the trap and the pressure, or head, against which the trap discharges, while the amount of water which a given orifice will discharge per hour varies as the square root of the pressure differential. It should be appreciated also, that while a so-called high pressure trap will operate on low pressure, it would have much greater capacity under such conditions if fitted with a discharge valve orifice proportioned for low pressure service. So fitted, a smaller trap might suffice. A low pressure trap, however, will not operate successfully on high pressure.

The importance of employing a suitable discharge orifice is stressed, for it is failure to employ properly proportioned discharge ports which is responsible for much unsatisfactory trap service. Large numbers of steam traps have been installed with discharge-valve orifices very much smaller than the inlet to the trap and without apparent consideration to the operating pressure. Of course, the higher the pressure, the smaller should be the orifice, but for any definite pressure differential there is always a particular size of orifice with which the ultimate capacity of the trap is realized and for which the economical discharge piping and fittings are proportioned.

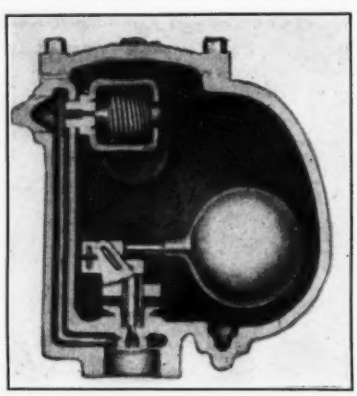
The really efficient steam trap is one which handles the condensate at a temperature as near that of the entering steam as is feasible, with reasonable consideration to possibilities of abnormally heavy rushes of water. When handling process and exhaust steams at pressures commonly employed for paper drying and in water heating, the condensate can frequently be returned to the boilers at a temperature of from 50 to 75 degrees higher than that of steam at atmospheric pressure, effecting substan-




*Illinois Engineering Co.*

FIG. 3

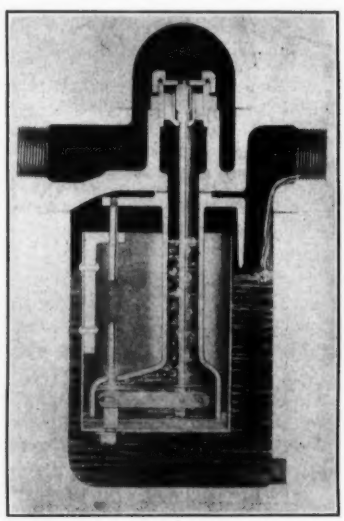
**Bucket steam trap construction incorporating vertical lift bucket.**



*Sarco Co., Inc.*

FIG. 4

**Float type steam trap with thermostatic air relief valve.**



*Wright-Austin Co.*

FIG. 5

**Type of bucket steam trap which removes air from the condensate by suction.**

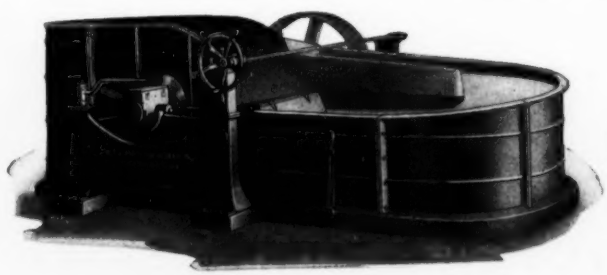
# FACTS

## Which apply to YOUR mill

**1.** The quality of paper depends largely on the equipment and skill used in preparing the raw material from which the finished product is made.

**2.** Much of this equipment and skill is in the Beater Room where the paper may be made good or bad.

**3.** Your Beater Room plays such an important part in your production, you should give it more consideration in order to meet the increased demand for better quality paper. The cost of maintaining the Beater Room equipment is a small item, but pays big dividends.



May we send a representative to survey your Beater Room and give you a report at our expense?

**SEND IN THE COUPON**

*Gentlemen:*

Without obligating ourselves, we would like to discuss with your representatives certain details pertaining to our Beater Room.

Company Name .....

Address ..... By .....

**-Dilts-**

**MACHINE WORKS Inc. FULTON, N.Y.**

*"Your Paper Is Made in Your Beaters"*

tial and very desirable economies in fuel consumption. Such heat salvage is possible, however, only if the exhaust-valve orifice is correctly proportioned to the existing pressure differential.

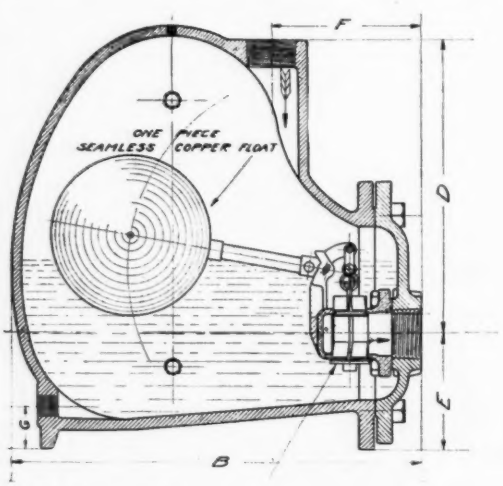
### Discharge Heads and Trap Locations

The attainment of such desirable balance is influenced chiefly by the back pressure on the valve and by the location lever of the trap. That is to say, the dominant factor in the efficacy of a steam trap is the pressure head, imposed and induced, against which the discharge takes place. About 2.3 foot water head is equivalent to a pressure of 1 pound per square inch, but as the friction through connected piping, etc. adds resistance it is customary to figure 2 feet per pound pressure for general computations and check-ups.

When the trap is located at a higher level than the bottom of the receptacle drained, imposing an induced head, a water seal ahead of the trap is necessary and the pipe leading to the inlet of the trap should be dropped somewhat before it is run up to the trap, but the drop below the drain point does not have to be taken into account in determining the induced head to be deducted from the pressure in the trap, when determining the actual pressure differential Any additional friction head imposed by the drop is amply provided for in the arbitrary computation based upon a 2 foot head per pound pressure.

Provisions should invariably be made to facilitate servicing the trap, by either installing a shut-off valve in the inlet pipe, or by a by-pass connection with the necessary valves, the latter arrangement being the more desirable. With the by-pass connection, the condensate can be discharged through the by-pass while the trap is opened for inspection and attention. Strainers or separators should also be placed in the inlet pipe to guard against the entrance of foreign matter clogging or choking the valve ports. Without such safeguards, the trap, particularly if it is installed at the lowest point to be drained, becomes a natural receptacle for the scale and sediment carried through the steam pipes.

An efficient strainer in the inlet pipe to a steam trap will arrest as much as 90 per cent. of the fine scale and sediment which would otherwise lodge in the trap and interfere with its effective operation. Even with such protection, however, it is necessary to subject the trap to periodic "blow-downs" and to clean the strainer thoroughly. Unless this is done regularly, satisfactory trap operation cannot be counted upon.




*Courtesy: The Swartwout Co*

FIG. 6

**Float type of steam trap suited for low pressure and large capacity requirements.**

### Bucket Trap Constructions

The constructional details of these bucket type, nonreturn steam traps are patterned, as a rule, along one of two general lines. In one, the bucket is hinged in such manner that when it is empty and the body of the trap filled with condensate to the point of flowing into the bucket it rides on the water in a level position and holds the valve mechanism tightly closed, while in the other construction the bucket is free to rise and fall vertically with the water in the trap, closing the trap discharge-valve with the rise of the bucket and opening the exhaust port only when the bucket fills with condensate and sinks. In either construction, the opening of the discharge valve, consummated with marked rapidity, is followed by the bucket's contents being promptly blown out through the exhaust orifice by the pressure of the steam behind the trap. The empty bucket then immediately floats and closes the discharge valve.

Many ingenious methods of instantly opening and closing the discharge valve have been developed, making use of powerful and quick-acting leverages in the case of hinged buckets and of shocks of impact in the case of the vertical drop buckets. The valve mechanisms are also cleverly devised and incorporate refinements of considerable merit, but all these details should be carefully investigated by the purchaser of bucket traps, as well as the questions of strength, valve trim, body metals, etc. There are a number of bucket traps on the market which will give excellent satisfaction if wisely chosen and properly installed. Considerations of the qualities of materials and workmanship, as well as the merits of design and construction, should command painstaking investigation. A steam trap is a highly essential and important mechanism.

While no attempt will be made to feature constructional details, attention can quite properly be drawn to a type of vertical lift bucket trap which incorporates a means of handling the entrained air and gases in the condensate in a novel manner. In this construction, when the discharge of the condensate in the bucket has taken place and the exhaust valve has just been closed by the rising of the bucket, the vertical discharge pipe to the valve is still full of water. As the water sinks back into the bucket, a vacuum tends to form in the upper part of the discharge tube which creates a suction and draws the gases entrained in the water up into the tube, the gases accumulating in the space vacated by the descending water as it seeks its level in the bucket. The bell shaped bottom of the discharge tube distributes the suction over virtually the entire cross-section area of the bucket and the removal of air and gases continues until the water entering the bucket from the main trap chamber equalizes the water levels in the bucket and in the discharge tube. When the trap again discharges, the air and gases removed from the condensate in this manner are expelled in advance of the condensate in the bucket.

### Float Type Steam Traps

A type of steam trap employing an inverted bucket hinged or pivoted in such a way that its rise and fall actuates the discharge valve mechanism is distinctive and might be classified either as a special type of bucket trap or as a device operated by a variety of float mechanism, possessing in some degree the characteristics of these two classes of steam traps. In these distinctive traps, the mixture of steam and condensate enters the body of the

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trap under the inverted bucket and as the main trap chamber gradually fills with condensate the bucket rises and closes the exhaust port. A vent in the bucket permits the escape of air and gases entrapped under the bucket and as the trap fills with condensate and water enters the bucket from the trap inlet and through the condensation of the wet steam under the bucket the buoyancy of the bucket is destroyed and it sinks, opening the discharge valve.

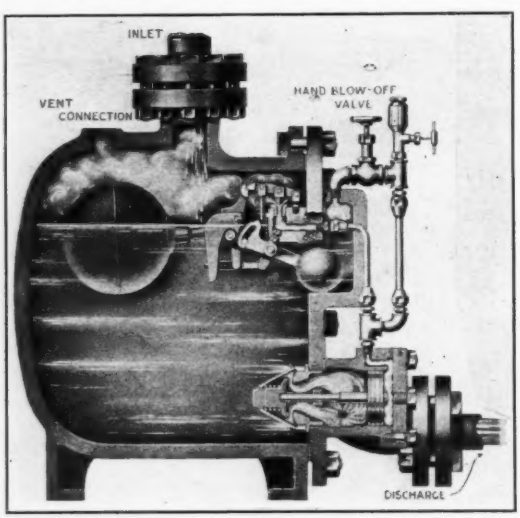
When the system is drained of water and steam continues to enter the trap, the water in the bucket is displaced and the bucket regains its buoyancy and rises, closing the discharge valve. As the steam entrapped in the bucket condenses and provides room, more steam or water from the inlet to the trap enters the bucket. If it is steam which enters, it merely rises up into the bucket, but if water enters the buoyancy of the bucket decreases as the entrapped steam continues to condense, until the buoyancy of the bucket is overcome by its weight and it sinks, opening the exhaust valve and discharging the water preparatory to repeating the service cycle.

The more usual varieties of float type steam traps, with which most pulp and paper mills should be well acquainted, need hardly be described, but one distinctive refinement incorporated in an excellent device can well be mentioned, a thermostatic vent built into the trap which prevents any possibility of the trap becoming air bound. This consists of a small valve located in the upper part of the trap and actuated by a helically coiled bellows partially filled with a volatile liquid.

The valve discharges into a port connected to the main outlet from the trap, by-passing the regular exhaust valve. As long as there is air present in the trap, this thermostatic valve remains open, but it closes tightly the instant that the relatively hot steam reaches it, the trap then functioning as an ordinary float type steam trap, any entrapped or entrained air being discharged with the condensate through the regular trap outlet.

### Piston Operated Steam Traps

For the satisfactory drainage of steam purifiers, superheated steam lines, headers, heaters, separators, etc., which in the modern high pressure steam plants present problems little anticipated in the old days, the third class of piston operated steam traps with large discharge capacity have become virtually essential.




*Courtesy: W. H. Nicholson & Co.*

FIG. 7

**Piston operated steam trap for high pressure and large capacity requirements.**

These devices are still quite new to many pulp and paper mills and for this reason a brief description of one or two of the approved varieties of this type of steam trap will be of interest.

### Drainage of Steam Purifiers

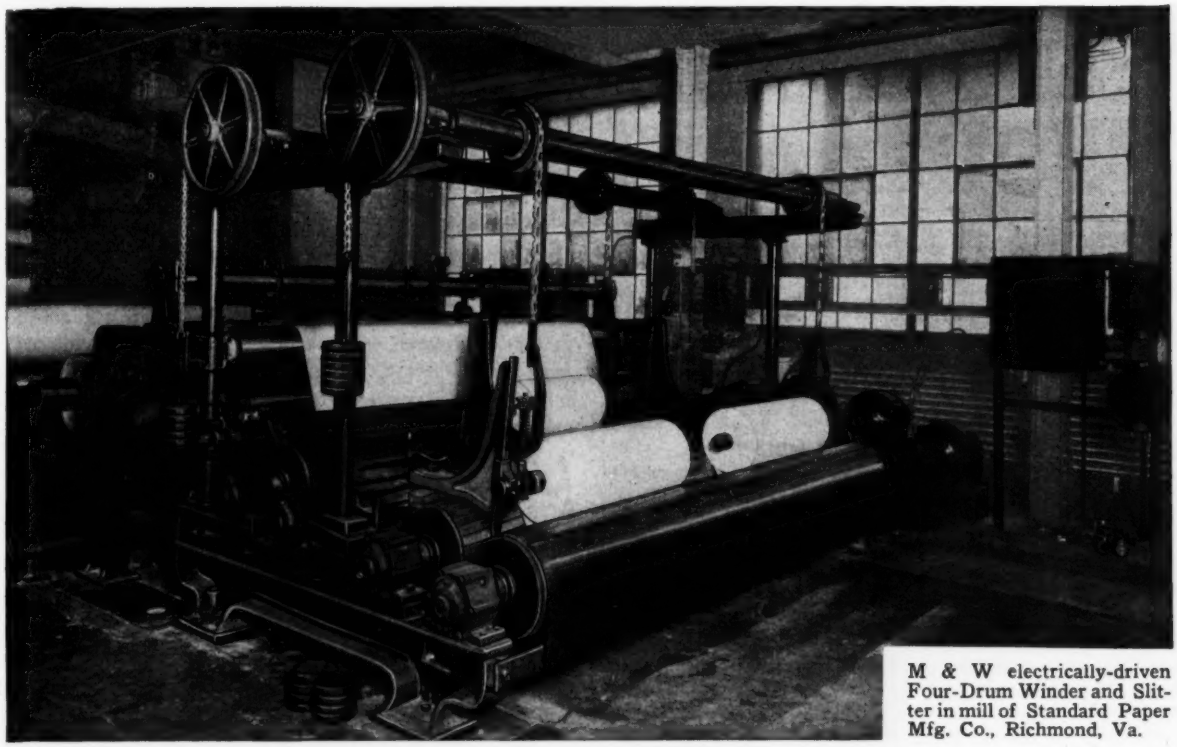
In the drainage of steam purifiers, these traps are in particular demand, for the large amount of dirt, boiler compound, scale and other foreign matter removed from the steam by purifiers requires the use of a trap with the ability to discharge large volumes of water almost instantly, in case the boilers prime or foam. Also, the trap should be of such construction that its vital working parts are well protected from the erosive action of dirt and scale discharged from the trap at high velocity.

In one variety of modern high pressure steam trap meeting these exacting requirements, the movement of solid displacement bodies opens a pilot valve and admits steam to act upon a piston, which in turn actuates the main discharge valve. When the pilot valve admits steam to the top of the piston, this plunger immediately makes a full stroke and, ample power being available, the main valve opens wide, presenting a full port area discharge. This main valve, being an unbalanced disc valve, returns to its seat immediately on the supply of actuating steam being cutoff by the pilot valve, a rapid and even travel being secured by virtue of a controlling dash pot construction. This dash pot, incidentally, also surrounds the main valve and protects it from destructive erosion while the discharge flow of condensate takes place. The main valve can also be operated by admitting steam to the cylinder through a hand-operated by-pass valve built integral with the pilot valve casing.

These distinctive steam traps are now procurable for service on steam pressures up to 1,350 pounds per square inch, with seamless forged steel bodies well able to withstand temperature up to 750 degrees Fahrenheit. For more moderate steam pressures, the traps are built with cast iron, nichrome iron and cast steel bodies, depending upon the severity of service requirements. In the higher pressure class, traps with a 2-inch inlet and a 1½-inch outlet have discharge capacities up to 235,000 pounds per hour at a differential pressure of 1,000 pounds per square inch.

Another and deservedly popular type of these high pressure, piston operated steam traps is illustrated and also has exceptionally large discharge capacity. The float mechanism, very substantially constructed, serves simply to open the steam valve which admits the actuating live steam behind the operating piston which, on its forward travel, unseats the main, mushroom type discharging valve. As the condensate in the trap rushes out through the open discharge valve, the actuating float goes down with the water level and in so doing throws out a beam latch which closes the steam supply valve. The water pressure against the actuating piston plunger then closes the main, mushroom valve and shuts off the discharge.

Traps capable of rendering such classes of service effectively are, naturally, those in which the modern mill is chiefly concerned just at present, but the limits necessarily imposed upon a general discussion of this character precludes more analytical investigation here. The novelty of these heavy duty devices may lead the mill, however, to giving greater heed to good steam trap practice and by so doing effecting worthwhile benefits as well from more suitable applications and uses of so-termed commercial steam traps.



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## FOREIGN PAPER TRADE

March exports of paper and paper products were valued at $2,090,714 compared with $2,860,734, a year ago, according to the Paper Division of the Department of Commerce. The heaviest losses occurred as follows: book paper, not coated, 50 per cent, wrapping paper 43 per cent, tissue and crepe paper 63 per cent, fiber insulating lath or board 49 per cent, wall board of paper or pulp 64 per cent, blotting paper 40 per cent, papeteries 45 per cent, vulcanized fiber sheets, strips, rods, and tubes 39 per cent; and from 25 to 35 per cent losses were noted in the following: cover paper, other writing paper, paper hangings (wall paper), and envelopes, compared with the same month of last year. The items that did not share in this loss were: grease proof and water proof papers which gained 96 per cent and amounted to $96,625, toilet paper gained 24 per cent and amounted to $71,388, sheathing and building papers showed an increase of 59 per cent, valued at $59,824, paper bags increased 65 per cent and the amount totaled $99,125, cash register and adding-machine paper showed a rising tendency totaling 34 per cent and amounting to $36,584. There were also gains approximating 4 to 6 per cent in the following items: paper towels and paper napkins, bristols and bristol boards, and filing folders, index cards and other office forms.

March exports of paper and paper products were 8 per cent higher than that of the preceding month's total. The most notable gains were as follows: book paper, not coated, 60 per cent, paper towels and paper napkins 18 per cent, vulcanized fiber sheets, strips, rods and tubes 24 per cent, paper bags 111 per cent, other writing paper 18 per cent, papeteries (fancy writing paper) 78 per cent, filing folders, index cards, and other office forms, 55 per cent, blotting paper 74 per cent, and box boards 35 per cent. The heaviest losses sustained were tissue and crepe paper 45 per cent, fiber insulating lath or boards 29 per cent, and cash register and adding-machine paper 33 per cent.

Total exports of paper base stocks during this month were valued at $237,138 against $182,611 for March, 1930. Exports of rags and other pulp showed an increase of 16 per cent, compared with a year ago, and were 21 per cent higher than in the preceding month. While all other items show an increase, it is not as pronounced as the previous mentioned item.

March imports of paper and paper products totaled $10,732,305 compared with $12,410,732 in the same month last year and $9,871,476 in the preceding month. The great bulk of these receipts consist of 169,345 short tons of standard news print, the imports of which were valued at $9,550,534 during the month under review. From Canada, our chief supplier of this product, 157,698 short tons were received. Imports of this commodity a year ago amounted to $10,871,190 and in the preceding month they were valued at $8,423,765. Our next most important import item in this group is cigarette paper, cigarette books and covers, totaling $453,752 in March as against $398,701 a year ago, and $825,236 in the preceding month. Imports of the following items were considerably less than a year ago: standard news print, other printing paper, greaseproof and waterproof papers, kraft wrapping paper, writing and drawing papers, surface coated papers, tissue and similar papers, pulp boards in rolls, paper board, pulp board and cardboard, hanging paper (wall paper), paper boxes, papier maché and pulp manufactures, and all other paper and manufactures. Compared with the preceding month gains were noted in the following: kraft wrapping paper, writing and drawing paper, writing paper and envelope combinations, surface coated papers, tissue and similar paper weighing not over 6 pounds to the ream, paper board, pulp board and card board, hanging paper (wall paper), and other paper and manufactures. Decreases were noted in the imports of greaseproof and waterproof papers, pulp board in rolls and cigarette paper, cigarette books, and covers.

Imports of paper base stocks in March totaled $5,079,777, a decrease of 39 per cent, compared with a year ago, and 16 per cent compared with the preceding month. Imports of pulp wood fell 56 per cent short of last year's total, mechanically ground wood 57 per cent, sulphite wood pulp 24 per cent, sulphate wood pulp, unbleached (kraft pulp) 60 per cent, rags for paper stock 77 per cent, and other paper stocks dropped 54 per cent. The rise of imports during March over the preceding month were sulphate wood pulp, bleached 110 per cent, rags for paper stock 121 per cent, and other paper stock 13 per cent.

## PAPER CREDIT MEN TO MEET

A credit conclave of the representatives of the paper and paper products industries, numbering about 30 credit executives, will be one of the 22 credit group conferences which will feature the Credit Congress of Industry of the 36th annual convention of the National Association of

Credit Men at Boston, Mass., June 22-27, it was announced recently by W. S. Swingle, convention director of the Association.

The paper and paper products conference, under the chairmanship of T. K. Cree, vice-president of the Alling & Cory Company of Pittsburgh, Pa., will meet along with the other groups on Friday and Saturday, June 26 and 27. The Credit Congress of Industry, of which this group is a part, has grown out of the credit group sessions which have been held at each convention since they were successfully introduced in 1924.

The purposes of the credit groups, under the supervision of the National Asociation of Credit Men, are to reduce credit losses, to better credit technique and to improve the organization of credit departments.

Among the functions of the credit group are the cooperative handling of embarrassed or insolvent estates, the concentration of claims in case of difficulty, the consolidation of ledger experience and the standardization of terms and discounts. Another important phase of credit group work is the exchange of information concerning both credit and sales conditions, thus giving each member important data on which to base his business activity in all sections of the country.

## New TAPPI Members

Folke Agerstrand is a mechanical engineer graduate of the Royale Technical College of Sweden and is at present in the employ of the Scott Paper Company of Chester, Pa. Mr. Agerstrand has worked as an engineer for Mo and Domsjo A/B, Husum, Sweden, Brompton Pulp and Paper Company, Hummel-Ross Fibre Company, and the Central Paper Company.

Torsten Bergill is a student at the Institute of Paper Chemistry, Appleton, Wis. In 1920 he graduated as a mechanical engineer from the Orebro Polytechnicum in Sweden and since then has worked as a paper machine operator and assistant superintendent in various Swedish mills.

Carleton L. Clark is a member of the sales organization of the Nash Engineering Company in New York City. Mr. Clark attended Purdue University and was formerly employed by the Overmyer Mould Company, Winchester, Ind.

Albert E. Conklin is chemical engineer for the Berkshire Coated Paper Company, Great Barrington, Mass. In 1926 he graduated from Bucknell University and has since worked as a research chemist for Du Pont Rayon Company, Buffalo, N. Y., Champion Fibre Company, Canton, N. C. and the Dennison Manufacturing Company, Framingham, Mass.

P. Frederick Gross is a student at the Institute of Paper Chemistry, Appleton, Wis. In 1930 he graduated from the University of Southern California.

Harland R. Heuer is pulp mill superintendent of the Newton Falls Paper Company. Before going to Newton Falls Mr. Heuer started in the paper industry at the Nekoosa-Edwards Paper Company and has been sulphite superintendent in a number of mills including the Hartje Paper Company, St. Regis Paper Company, Arrowhead Paper Mills, Abitibi Paper Company, Hawley Pulp and Paper Company, Wheat Paper Company, and has worked for G. D. Jenssen Company.

Lauren Laird is acting manufacturing manager of the Bird Machine Company of South Walpole, Mass. In 1922 he graduated from the mechanical engineerng course at the Lowell Institute, Cambridge, Mass.

John N. McGovern graduated from the University of Wisconsin in 1930 and has since then been a junior technologist at the Forest Products Laboratory, Madison, Wis.

Louis J. McNamara is pulp and paper instructor in the Wisconsin State Vocational Schools, Wausau, Wis. and is a graduate of the Lewis Institute, St. Norberts College and the Armour Institute of Technology. Since 1920 Mr. McNamara has been employed by the Kimberly Clark Corporation and the Spruce Falls Pulp and Paper Company in their sulphite pulp mills.

George R. K. Moorhead is chief chemist of the Oregon Pulp Pulp and Paper Company, Salem, Oregon, and a graduate in 1925 of Willamette University. Mr. Moorhead was formerly employed by the Chaney Timber Company at Coquille, Ore.

Morris B. Mount, is a member of the firm of the Mount Chemical Equipment Company in Lynchburg, Va., manufacturers of equipment of lime recovery, causticizing, rotary vacuum filters, etc. Mr. Mount is a graduate in 1919 of the University of Virginia.

Edward H. Niederauer is technical director of the Sylva Paperboard Company, Sylva, N. C. In 1929 he graduated from Purdue University and then jointed the technical service department of the Mead Corporation at Kingsport, Tenn.

John C. Pew is a graduate of the Ohio State University and is at present a junior engineer at the Forest Products Laboratory, Madison, Wis.

Nels H. Sandberg is mill superintendent of the Waldorf Paper Products Company, St. Paul, Minn.

Carlo Vicario is manager of the pulp and paper division of the Nash Engineering Company, New York City, manufacturers of vacuum pumps. Mr. Vicario graduated from the Massachusetts Institute of Technology in 1924 following which he was employed as commercial engineer by the New York Edison Company.

## To Improve Tarentum Mills

W. Allan Lindsay, general manager of the Tarentum Paper Mills, Tarentum, Pa., writes:—

"It has just been called to our attention that the report has been circulated in New York City that the Tarentum Paper Mills have shut down and that they are going to liquidate their business. We wish to deny this most emphatically as we have no intention of liquidating the business. We are planning to rebuild our boiler plant and electrify the entire mill in the very near future."

Mr. Lindsay, who visited New York during the week, amplified the foregoing statement to a representative of the PAPER TRADE JOURNAL by saying that the plant had been vastly improved since he assumed the management a number of years ago, that all machines were running steadily, that the demand for the product was increasing and that the company was prosperous, with liquid assets in the bank much more than sufficient to take care of all its bills. In place of liquidating, Mr. Lindsay said that the company was more aggressively active than it had been since he assumed the management and that the outlook had never been so auspicious for its success.

## L. F. Leach Dead

Word has been received that L. F. Leach, manager of the Kansas City Paper House, at Oklahoma City, Okla., passed away on Tuesday, May 12.

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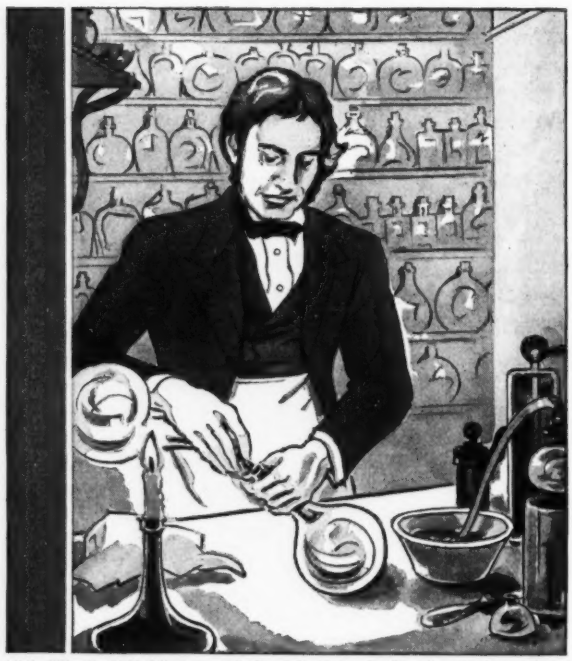

*Michael Faraday in his laboratory at the Royal Institution, London, where the famous English scientist first liquefied chlorine gas*

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Perhaps the most outstanding recent improvement in the development of chlorine is the introduction of Mathieson HTH—a stable concentrated hypochlorite containing 65% of available chlorine. This new chlorine-carrier has nearly twice the strength of the best grades of commercial bleaching powder and marks a far-reaching step in nearly a century of effort to improve the distribution of chlorine and make its application simpler, safer and more convenient.

. . .

*HTH was made commercially available through the technical skill and resourcefulness of the Mathieson organization working to widen the usefulness of chlorine. Years of service, both to American industry and to sanitary authorities, have placed Mathieson in the forefront as a producer and shipper of liquid chlorine and chlorine products.*

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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

# Lime Recovery*

By Ralph Reid[1]

The recovery of lime used for causticizing has been practiced for some time in soda mills, but kraft mills have, until the last few years, wasted their lime sludge. Even yet, there are a few mills wasting all of their sludge, and it seems that many mills which are recovering lime suldge are doing so only to the extent of about 70 per cent.

### 100 Per Cent Recovery Possible

From a theoretical standpoint 100 per cent recovery of lime should be possible. The only change that can occur through use is an increase in impurities, and if these can be successfully removed, the recovered lime should be as efficient as fresh lime for causticizing. It is quite essential that impurities be removed if a high percentage of recovery is to be expected without trouble from slow settling.

In practice the only losses that should occur in a recovery system are the unavoidable mechanical losses such as lime carried away in white liquor and wash water, stack losses, losses in cleaning, improper burning, etc. These should not exceed 10 per cent. We have operated with an average monthly loss of about 5 per cent and seldom it exceeds 8 per cent.

### A Simple System

The system which we use is quite simple, consisting of the oil type smelting furnace with the smelt running directly into dissolving tanks. The green liquor is pumped continuously through a clarifier for the removal of as much dirt as possible. From the clarifier the green liquor flows by gravity to a slacker. After the addition of lime the causticized liquor passes through a classifier and is pumped from these to batch settling tanks. Fresh lime is added in these tanks as needed. After settling, the white liquor is drawn off to storage and the mud is given a wash with weak wash returned from the lime filters. The lime mud wash is used in the horizontal mixers. The sludge is dropped to a storage tank from which it is pumped to vacuum filters. The cake discharged from these filters drops into an oil fired rotary lime kiln. The burned lime from this kiln is fed continuously to the slacker together with the green liquor.

### Reburned Lime Settling Rate

At the time this system was installed we were given many promises about the troubles we could expect from reburned lime. So far we have had no difficulty in operating other than a few minor mechanical troubles. Apparently reburned lime works as well as fresh lime, with the advantage of an increased settling rate.

In operating the green liquor clarifier we find that we get much better clarification if we keep the liquor as hot as possible. We also found very shortly after starting the clarifier that lagging was essential. With a bare clarifier tank, which in our case is out of doors, convection currents were created to such an extent that we were getting very dirty liquor. Lagging eliminated this trouble, and at the same time conserved the heat in the liquor.

It may increase the settling rate of the sludge to slack the lime with a small portion of the green liquor and add the rest of the liquor to the lime after slacking. However, in our case we find it simple to slack with all the green liquor going through the slacker. This gives us a sludge which settles at a rate of about 3½ to 4½ feet per hour.

Lime that has been used for three or four days with no addition of fresh lime has a tendency to form a slow settling sludge, and one that is difficult to filter. A careful control of slacking conditions may also give a better settling sludge. We find, however, that the addition of the five to ten per cent of fresh lime necessary to make up for losses will take care of our settling troubles.

### Removal of Impurities Essential

Clarification of green liquor and removal of impurities from the slacked lime seems to be essential to good operation in our recovery. We have operated with our clarifier by-passed for a week, and found that there was a gradual decrease in the settling rate of the lime sludge, which could be attributed to nothing except the fact that we are not clarifying the green liquor. At the same time there was an increase in the amount of material rejected by the classifier. The fact that the classifier is located after the clarifier probably prevented the accumulation of dirt to such an extent as to cause serious trouble.

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## Standards of the Hydraulic Society

The sixth edition of the Standards of The Hydraulic Society has just been issued. It is an enlarged booklet of 96 pages showing numerous additions and changes. Among the new material added is an index; a list showing the different types of pumps made by the member companies; illustrations of the rotation of centrifugal pumps; new definitions and illustrations of thrust bearings; illustrations of correct and incorrect methods of connecting suction pipe to a centrifugal pump; a revision of recommendations of materials for pumping special liquids; and a section on friction of paper stock in cast iron pipe, including nine pages of pulp friction curves.

Price of the phamphlet is one dollar and copies may be had from members or upon application to the secretary, C. H. Rohrbach, 90 West street, New York.

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* Presented at the spring meeting of the Pacific Section of the Technical Association of the Pulp and Paper Industry, Everett, Wash., April 18-19, 1931.

[1] Member TAPPI, chemist, Puget Sound Pulp and Timber Company, Anacortes, Wash.

# United States Patents On Papermaking

## First Quarter, 1931.

### Compiled by Clarence J. West, Chairman, Committee on Abstracts and Bibliography.

NOTE:—Copies of any of the patents listed below may be obtained from the United States Patent Office, Washington, D. C., at ten cents each in currency. Stamps not accepted.

JANUARY 6, 1931

1,787,725. Barking apparatus and method. Herbert W. Guettler, Chicago, Ill. Filed Jan. 7, 1928. 13 claims. (Cl. 144-208).

1,787,880. Bucking process for vegetable fibrous material. Gustav Ullmann, Vienna, Austria. Filed Jan. 24, 1930. 5 claims. (Cl. 92-15).

1,787,890. Roll. Frederick R. Woodward, assignor to Stowe and Woodward Company, Newton Upper Falls, Mass. Filed Dec. 12, 1929. 8 claims. (Cl. 92-29).

1,787,952. Manufacture of rubber-impregnated fibrous material. George A. Richter and Roger B. Hill, assignors to Brown Company, Berlin, N. H. Filed Nov. 27, 1928. 13 claims. (Cl. 92-21).

1,787,953. Processing of raw cellulosic materials. George A. Richter, assignor to Brown Company, Berlin, N. H. Filed Sept. 24, 1929. 6 claims. (Cl. 92-11).

1,787,954. Processing of raw cellulosic materials. George A. Richter, assignor to Brown Company, Berlin, N. H. Filed Sept. 24, 1929. 5 claims. (Cl. 92-11).

1,788,121. Laminated roofing. Frederick C. Overbury, assignor to The Patent and Licensing Corporation, Boston, Mass. Filed Mar. 2, 1926. 2 claims. (Cl. 154-51).

JANUARY 13, 1931.

1,788,469. Shower pipe. Paul H. Mielke, assignor to The Paper and Textile Machinery Co., Sandustky, Ohio. Filed Aug. 1, 1929. 6 claims. (Cl. 92-50).

1,788,531. Mold and its method of construction for paper-making machines. John Shirley Little, assignor to Western Electric Company, Incorporated, New York, N. Y. Filed Oct. 20, 1928. 19 claims. (Cl. 92-43).

1,788,555. Method of preparing cellulose pulp. Robert B. Wolf, New York, N. Y., Raymond P. Hill, Glen Rock, N. J., and Raymond S. Hatch, East Orange, N. J. Filed Feb. 8, 1929. 10 claims. (Cl. 92-11). A non-aqueous liquid containing sulphur dioxide is used.

1,788,648. Paper-roll-controlling device. Henry A. Wise Wood, assignor to Wood Newspaper Machinery Corporation, New York, N. Y. Filed Aug. 25, 1927. Renewed May 27, 1930. 10 claims. (Cl. 242-75).

1,788,790. Process of manufacturing paper and paper board. Levis Miller Booth, Plainfield, N. J. Filed Oct. 5, 1928. 10 claims. (Cl. 92-21).

1,788,840. Apparatus for washing pulp. Otto Mantius, New York, N. Y. Filed Apr. 6, 1928. 12 claims. (Cl. 141-12).

1,778,944. Pulp-molding machine. Merle P. Chaplin, assignor to Fidelity Trust Company, Portland, Me. Filed Oct. 11, 1926. 70 claims. (Cl. 92-56).

1,789,284. Constructional material. Albert C. Fischer, assignor to The Philip Carey Manufacturing Company, Chicago, Ill. Filed Aug. 15, 1927. 6 claims. (Cl. 91-68).

1,789,285. Constructional material. Albert C. Fischer, assignor to The Philip Carey Manufacturing Company, Chicago, Ill. Filed Aug. 15, 1927. Renewed July 14, 1920. 3 claims. (Cl. 91-68).

1,789,286. Constructional material. Albert C. Fischer, assignor to The Philip Carey Manufacturing Company, Chicago, Ill. Filed Aug. 15, 1927. Renewed July 14, 1920. 4 claims. (Cl. 91-68).

1,789,287. Constructional material. Albert C. Fischer, assignor to The Philip Carey Manufacturing Company, Chicago, Ill. Filed Aug. 15, 1927. 4 claims. (Cl. 91-68).

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1,789,327. Composite board. Homer Herbert Van Hagan, assignor to Certain-Teed Products Corporation, New York, N. Y. Filed Jan. 28, 1927. 5 claims. (Cl. 154-45.9).

1,789,354. Process for deriving high-grade cellulose from cottonseed hulls. Bela Dorner, Budapest, Hungary. Filed Oct. 26, 1929. 6 claims. (Cl. 92-20).

1,789,443. Roofing material. Harold Lester Levin, assignor to Anaconda Sales Company, New York, N. Y. Filed June 5, 1926. 1 claim. (Cl. 91-68).

1,789,445. Traversable suction roll for paper-making machines. William H. Millspaugh, assignor to The Paper and Textile Machinery Company, Sandusky, Ohio. Filed Aug. 25, 1928. 36 claims. (Cl. 92-44).

1,789,452. Method of manufacturing paper. Louis P. Schweitzer, New York, N. Y. Filed Oct. 24, 1928. 8 claims. (Cl. 92-38).

1,789,515. Paper making. Hervey G. Cram and Roy V. Weldon, assignor to Great Northern Paper Company, Millinocket, Me. Filed Aug. 19, 1927. 11 claims. (Cl. 92-49).

1,789,825. Hard grainless fiber product and process of manufacture. William H. Mason, assignor to Masonite Corporation, Laurel, Miss. Filed June 13, 1928. 8 claims. (Cl. 92-67).

1,789,887. Covering and process of making it. William L. Taylor, Cincinnati, Ohio. Filed Oct. 9, 1925. 1 claim. (Cl. 154-50).

JANUARY 27, 1931.

1,789,965. Mechanism for superimposing sheets of paper. Peter J. Christman, Jr., Green Bay, Wis. Filed June 12, 1929. 8 claims. (Cl. 270-59).

1,790,001. Method of separating the pith and fiber of cornstalks. Elton R. Darling, assignor to Cornstalk Products Company, Inc., New York, N. Y. Filed June 5, 1928. 4 claims. (Cl. 92-1).

1,790,002. Process for the preparation of parchment paper stock from cornstalk pith. Elton R. Darling, assignor to Cornstalk Products Company, Inc., New York, N. Y. Filed Oct. 19, 1928. 3 claims. (Cl. 92-13).

1,790,082. Fourdrinier paper machine. Alonzo Aldrich, Beloit, Wis. Filed July 5, 1923. 32 claims. (Cl. 92-44).

1,790,170. Process for the production of high alpha-cellulose fiber. George A. Richter, assignor to Brown Company, Berlin, N. H. Filed May 6, 1925. Renewed July 23, 1927. 13 claims. (Cl. 92-13).

1,790,178. Fibre board and its manufacture. Daniel Manson Sutherland, Jr., Morrisville, Pa. Filed Aug. 6, 1928. 8 claims. (Cl. 92-61).

1,790,252. Plaster-board manufacture. Alexander S. Speer, assignor to Certain-Teed Products Corporation, New York, N. Y. Filed Jan. 12, 1927. 11 claims. (Cl. 154-2).

1,790,260. Method of manufacturing chemical pulp or cellulose. Donald E. Cable, assignor to Oxford Paper Company, New York, N. Y. Filed Oct. 27, 1927. 16 claims. (Cl. 92-11).

1,790,367. Colored and tinted parchment paper and the like and process for the manufacture of the same. Robert Irving Cowen, New York, N. Y. Filed Mar. 6, 1928. 14 claims. (Cl. 8-5).

1,790,536. Paper-making machine. Austin E. Cofrin, Green Bay, Wis. Filed Jan. 22, 1927. 3 claims. (Cl. 92-44).

1,790,574. Manufacture and production of cigarette paper. Jacques Francois Marie Crolard, assignor to British-American Tobacco Company, Limited, London, England. Filed Jan. 29, 1930. 4 claims. (Cl. 92-21).

1,790,582. Stock-winding mechanism for calenders. Thornton G. Graham and Philip V. Tippet, assignors to The Vaughn Machinery Company, Cuyahoga Falls, Ohio. Filed Oct. 1, 1923. Renewed Feb. 4, 1928. 8 claims. (Cl. 242-55).

1,790,615. Process for the manufacture of metallized fibrous materials metallized with a noble metal. Fritz Neuber and Rudolf Nowak, assignor to Oskar Trebitsch, Vienna, Austria. Filed Feb. 23, 1928. 1 claim. (Cl. 91-68).

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1,790,714. Method of washing pulp. Otto Mantius, New York, N. Y. Filed Apr. 6, 1928. 4 claims. (Cl. 141-12).

1,790,822. Colored sheet material. John W. Ledeboer, assignor to Ambler Asbestos Shingle and Sheating Company, Ambler, Pa. Filed Dec. 8, 1928. 6 claims. (Cl. 92-41).

1,790,830. Continuous paper beater. Thomas J. Muller, Owensmouth, Calif. Filed Apr. 20, 1929. 5 claims. (Cl. 92-24).

1,790,838. Fiber-liberating process. George A. Richter and Milton O. Schur, assignors to Brown Company, Berlin, N. H. Filed June 27, 1927. 7 claims. (Cl. 92-13).

1,790,839. Pulp web of high absorptivity and method of making same. George A. Richter, assignor to Brown Company, Berlin, N. H. Filed June 1, 1928. 10 claims. (Cl. 92-21).

1,790,852. Earl E. Berry, assignor to Beloit Iron Works, Beloit, Wis. Filed Nov. 14, 1927. 8 claims. (Cl. 92-51).

1,790,909. Tube-winding machinery. George Odin Frostad, assignor to The National Paper Can Company, Milwaukee, Wis. Filed Mar. 27, 1928. 22 claims. (Cl. 93-81).

1,790,980. Decorticating and depulping machine. Karl Erb, Frankfort-on-the-Main-Griesheim, Germany. Filed May 17, 1929. 5 claims. (Cl. 19-24).

1,791,040. Process of waterproofing paper. William H. Richardson, assignor to The Richardson Company, Lockland, Ohio. Filed May 10, 1926. 5 claims. (Cl. 93-36).

1,791,065. Suction box for felted-sheet making machines. Ostilio Severini, assignor to Societa Invenzioni Brevetti Anonima-Torino, Turin, Italy. Filed Jan. 11, 1929. 3 claims. (Cl. 92-51).

1,791,077. Method of manufacturing briquettes from clay, sulphite liquor and carbonaceous material. Ludwig Weber, Berlin, Germany. Filed July 18, 1927. 4 claims. (Cl. 44-16).

1,791,092. Process for the manufacture of unbleached paper, cardboard and the like. Valdemar Willemoes D'Obry, Schlachtensee, near Berlin, Germany. Filed May 1, 1924. 4 claims. (Cl. 92-3).

1,791,242. Log-barking machine. Franz Himmelsbach and Hermann Tormin, assignors to Impreva Holzimpragnierung und Holzverwertung Aktiengesellschaft, Charlottenburg, Germany. Filed Sept. 13, 1926. 7 claims. (Cl. 144-208).

1,791,248. Felted cellulose-fiber product. George I. Schwartz, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Sept. 22, 1928. 13 claims. (Cl. 8-20).

1,791,384. Paper-making machinery. Dee L. Shaefer, assignor to The Black-Clawson Company, Hamilton, Ohio. Filed Sept. 14, 1925. 4 claims. (Cl. 92-50). Felt conditioner.

1,791,388. Self-dumping rag catcher for beating engines. George D. Stevens, assignor to Dilts Machine Works, Inc., Fulton, N. Y. Filed Mar. 29, 1930. 4 claims. (Cl. 92-44).

1,791,412. Paper machine in order to prevent breakage of the paper on the couch press or wire cloth. Nils Andor Jacobsen, Hokksund, Norway. Filed Jan. 3, 1930. 1 claim. (Cl. 92-38).

1,791,445. Process for the recovery of paste from printed paper and chiefly wood paste. Louis Grenaudier, Paris, France. Filed Oct. 19, 1927. 5 claims. (Cl. 92-13).

1,791,476. Process of producing at the cooking of cellulose and especially of sulphite cellulose a waste liquor containing a high percentage of organic matters. Gustaf Haglund, assignor to Patentaktiebolaget Grondal-Ramen, Stockholm, Sweden. Filed Mar. 1, 1930. 2 claims. (Cl. 92-7).

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1,791,535. Suction box. George Peebles, assignor to Selbec, Inc., New York, N. Y. Filed Oct. 12, 1926. 5 claims. (Cl. 92-51).

1,791,537. Water-laid felt wool fiber. Henry Philip Shopneck, assignor to Arden Box Toe Company, Watertown, Mass. Filed June 29, 1926. 2 claims. (Cl. 92-21).

1,791,538. Water-laid felt, leather fiber. Henry Philip Shopneck, assignor to Arden Box Toe Company, Watertown, Mass. Filed June 29, 1926. 4 claims. (Cl. 92-21).

1,791,560. Method of and machine for making multicolored strip shingles. George P. Heppes, assignor to The Patent and Licensing Corporation, Boston, Mass. Filed Apr. 24, 1926. 11 claims. (Cl. 91-68).

1,791,571. Method of and machine for making roofing elements of assorted colors. Frederick C. Overbury, assignor to The Patent and Licensing Corporation, Boston, Mass. Filed Apr. 21, 1926. 14 claims. (Cl. 91-68).

1,791,705. Agitator. Joseph E. Bond, Appleton, Wis. Filed Apr. 8, 1929. 3 claims. (Cl. 92-37).

1,791,706. Agitator, Joseph E. Bond, Appleton, Wis. Filed Apr. 8, 1929. 3 claims. (Cl. 92-37).

1,791,791. Method of producing fabricated lath panels. George A. Buttress, assignor to F. and B. Holding Co., Los Angeles, Calif. Filed Nov. 23, 1927. 4 claims. (Cl. 154-2).

1,791,792. Method of forming lath panels. George A. Buttress, assignor to F. and B. Holding Company, Los Angeles, Calif. Filed Nov. 13, 1928. 9 claims. (Cl. 154-2).

1,791,856. Structural material. Charles A. Van Dusen, assignor to The Glenn L. Martin Company, Cleveland, Ohio. Filed May 11, 1926. 3 claims. (Cl. 154-45.9).

1,791,860. Paper sizing agent. Arthur W. Burwell, assignor to Alox Chemical Corporation, New York, N. Y. Filed Dec. 11, 1925. 4 claims. (Cl. 87-16).

1,792,009. Process for the production of cellulose. Erik Hagglund, Abo, Finland. Filed June 16, 1928. 2 claims. (Cl. 92-13).

1,792,095. Stencil sheet. Shinjiro Horii, Tokyo, Japan. Filed July 26, 1928. 2 claims. (Cl. 41-38.6).

1,792,098. Process for forming feltable bituminous pulps. Charles L. Keller, assignor to The Richardson Company, Lockland, Ohio. Filed May 20, 1929. 9 claims. (Cl. 92-21).

1,792,202. Process for treating the bagasse of sugar cane. Earnest Charles Hemmer Valet, as-

signor to Cellulose Hemmer Valet, Sociedad Anonima, Mexico City, Mexico. Filed June 8, 1929. 10 claims. (Cl. 92-9).

1,792,351. Process of producing paper stock. Harry P. Bassett, Synthiana, Ky. Filed June 3, 1925. 8 claims. (Cl. 92-9).

1,792,364. Apparatus for embossing. Charles E. Dilkes, Newark, N. J. Filed Jan. 16, 1929. 4 claims. (Cl. 219-19).

1,792,382. Paper product and method of producing the same. William Clarence Lodge, assignor to Oswego Falls Corporation, Fulton, N. Y. Filed Jan. 28, 1927. 2 claims. (Cl. 92-21). Waterproofing with rosin and wax.

1,792,414. Method of and apparatus for printing and waxing paper in one operation. Harry C. Cole, Philadelphia, Pa. Filed Apr. 3, 1928. 3 claims. (Cl. 91-67.9).

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R17,971. Bar for beater-engine rolls. Arthur M. McPhillips, Beloit, Wis. Original No. 1,674,911, dated June 26, 1928. Filed Oct. 30, 1930. 8 claims. (Cl. 92-22).

1,792,482. Log-sorting apparatus. Joseph Daw, Charles A. Johnson and Marlborough Packard, assignors to Brown Company, Berlin, N. H. Filed Apr. 6, 1927. 5 claims. (Cl. 198-1).

1,792,510. Kraft-simulating pulp and process of producing same. George A. Richter, assignor to Brown Company, Berlin, N. H. Filed July 1, 1925. 2 claims. (Cl. 92-11).

1,792,505. Cutting element. Clarence W. Noble, assignor to The Noble and Wood Machine Co., Hoosick Falls, N. Y. Filed Oct. 24, 1929. 13 claims. (Cl. 92-22).

1,792,546. Cutting element. Clarence W. Noble, assignor to The Noble and Wood Machine Co., Hoosick Falls, N. Y. Filed Dec. 27, 1927. 6 claims. (Cl. 92-22).

1,792,558. Lap-folding device for wet machines. Jean K. Vanatta, assignor to Nekoosa-Edwards Paper Company, Port Edward, Wis. Filed Apr. 9, 1930. 9 claims. (Cl. 22-39).

1,792,623. Paper-products-making machine. Louis Putnam Willsea, assignor to Box Blank Corporation, New York, N. Y. Filed June 26, 1926. 16 claims. (Cl. 93-93).

1,792,678. Bag-bottoming machine. Alfred Clement Coty and Thomas Earl Coty, Watertown, N. Y. Filed Aug. 30, 1929. 9 claims. (Cl. 93-27)

1,792,703. Specific digestion procedure and apparatus for use in the production of chemical wood pulp. Clifford E. Peterson, assignor to The Champion Fibre Company, Canton, N. C. Filed Aug. 12, 1929. 2 claims. (Cl. 92-13).

1,792,724. Paper-cup blank. Cesare Barbieri, assignor to Vortex Cup Company, Chicago, Ill. Filed Apr. 14, 1928. 1 claim. (Cl. 229-1.5).

1,792,805. Method of treating fibrous materials. Frederick W. Broderick, Oakland, Calif. Filed Aug. 22, 1927. 2 claims. (Cl. 8-2).

1,793,095. System of and apparatus for the treatment of paper pulp. William V. Knoll, assignor to The Mid-West Machine Company, Dayton, Ohio. Filed Oct. 4, 1926. 3 claims. (Cl. 92-24).

1,793,114. Slip-control calender. Ogden Minton, assignor to Minton Vacuum Dryer Corporation, Greenwich, Conn. Filed Mar. 27, 1929. 5 claims. (Cl. 92-73).

1,793,194. Fiber product and process of producing same. George A. Richter, assignor to Brown Company, Berlin, N. H. Filed Oct. 28, 1926. 18 claims. (Cl. 92-21).

1,793,230. Cylinder paper mill. Ulrich Kirchner, Biberach-on-the-Riss and Gerald Strecker, Darmstadt, Germany. Filed Nov. 2, 1929. 10 claims. (Cl. 92-24).

1,793,264. Method of cooking sulphite cellulose. Sergei I. Tschuwikowsky and Grigory I. Liachovetzky, Moscow, Union of Socialist Soviet Republics. Filed Nov. 8, 1929. 4 claims. (Cl. 92-11).

1,793,437. Wall-board enamel and method of applying the same. John W. Cowell, Grayling, Mich. Filed Dec. 16, 1927. 4 claims. (Cl. 91-68).

1,793,439. Constructional material. Albert C. Fischer, assignor to The Philip Carey Manufacturing Company, Chicago, Ill. Filed Mar. 25, 1925. 6 claims. (Cl. 154-51).

FEBRUARY 24, 1931.

R17,975. Machine and method for unfolding paper trays. Samuel Bergstein, assignor to Interstate Folding Box Company, Middletown, Ohio. Original No. 1,784,571, dated Dec. 9, 1930. Filed Jan. 9, 1931. 14 claims. (Cl. 93-53).

1,793,559. Paper-winding apparatus. John H. Reedy, assignor to The Champion Coated Paper Company, Hamilton, Ohio. Filed Mar. 15, 1929. 2 claims. (Cl. 242-65).

1,793,666. Floor covering and process of making the same. Julian T. Baldwin, assignor to Sandura Company, Inc., Philadelphia, Pa. Filed Oct. 29, 1926. Renewed May 17, 1930. 22 claims. (Cl. 154-2).

1,793,667. Floor covering and process of preparing the same. Julian T. Baldwin, assignor to Sandura Company, Inc., Philadelphia, Pa. Filed Jan. 8, 1927. Renewed May 16, 1930. 7 claims. (Cl. 154-2).

1,793,688. Press roll. William M. Gardella, assignor to Oliver United Filters Inc., San Francisco, Calif. Filed Apr. 17, 1930. 6 claims. (Cl. 92-49).

1,793,710. Package and process of forming the same. Michael J. Milmoe, assignor to F. B. Rediington Company, Chicago, Ill. Filed Jan. 5, 1925. Renewed May 16, 1930. 12 claims. (Cl. 93-2).

1,793,711. Method of wood disintegration. Waldemar O. Mitscherling, assignor to Albert M. Johnson, Chicago, Ill. Filed Dec. 27, 1928. 14 claims. (Cl. 92-1).

1,793,810. Waterproof board and method of preparing same. Harold L. Levin, assignor to The Flintkote Company, Boston, Mass. Filed Sept. 17, 1928. 7 claims. (Cl. 154-2).

1,793,839. Manufacture of waterproof fibrous products. Albert L. Clapp, Danvers, Mass. Filed Sept. 27, 1928. 8 claims. (Cl. 92-55).

1,794,058. Cleaner for paper driers. Arthur E. Broughton, assignor to Broughton Company, Minneapolis, Minn. Filed June 2, 1928. 10 claims. (Cl. 92-74).

1,794,059. Cleaner attachment for paper driers. Arthur E. Broughton, assignor to Broughton Company, Minneapolis, Minn. Filed Oct. 19, 1928. 6 claims. (Cl. 92-74).

1,794,065. Decorticating and depulping machine and method. Karl Erb, Frankfort-on-the-Main-Griesheim, Germany. Filed May 17, 1929. 2 claims. (Cl. 19-15).

1,794,174. Method of preparing ground wood pulp. Raymond S. Hatch, East Orange, N. J., Robert B. Wolf, New York, N. Y., and Raymond P. Hill, Glen Rock, N. J. Filed Jan. 31, 1929. 7 claims. (Cl. 92-20).

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1,794,433. Manufacture of fibrous sheet materials. Frank W. Young, Verona, N. J. Filed Dec. 8, 1927. 14 claims. (Cl. 92-39).

1,794,674. Method and apparatus for making roofing materials. Donald A. Cumfer, assignor to Anaconda Sales Company, New York, N. Y. Filed Oct. 26, 1929. 10 claims. (Cl. 154-1).

1,795,064. Machine for producing wood pulp. John A. Wiener, assignor to Oswego Board Corporation, Oswego, N. Y. Filed Apr. 12, 1929. 13 claims. (Cl. 83-75).

1,795,191. Manufacture of paper tubes. Watson H. Woodford, assignor to Remington Arms Company, Inc., Bridgeport, Conn. Filed Apr. 16, 1929. 13 claims. (Cl. 93-94).

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1,795,414. Manufacture of textile fibers. Joseph Viallet, assignor to N. T. Artificial Wool Company, Limited, London, England. Filed Oct. 5, 1929. 6 claims. (Cl. 92-5).

1,795,461. Stencil blank. Daniel A. Williams, assignor to A. B. Dick Company, Chicago, Ill. Filed Sept. 15, 1923. 2 claims. (Cl. 41-38.6).

1,795,528. Process of producing fiber and yarn from unretted flax plants. Henry Cowan Watson and Martin Waddell, assignors to Watson-Waddell Limited, Belfast, Ireland. Filed July 11, 1918. 3 claims. (Cl. 92-5).

1,795,556. Roll for calendering machines. Theodor Greis, Krefeld, Germany. Filed Mar. 15, 1928. 4 claims. (Cl. 92-77).

1,795,557. Method of treating black liquor obtained in the soda-pulp process. Erik Hägglund, Abo, Finland. Filed Jan. 10, 1930. 6 claims. (Cl. 92-2).

1,795,603. Method of producing pulp. Erwin H. Hussey, assignor to The Bauer Brothers Company, Springfield, Ohio. Filed Mar. 8, 1928. 3 claims. (Cl. 92-26).

1,795,754. Production of chemical pulp, etc. Linn Bradley and Edward P. McKeefe, assignors to Bradley-McKeefe Corporation, New York, N. Y. Filed Sept. 2, 1926. 24 claims. (Cl. 92-11).

1,795,755. Production of chemical pulp. Linn Bradley and Edward P. McKeefe, assignors to Bradley-McKeefe Corporation, New York, N. Y. Filed Sept. 2, 1926. Renewed Jan. 23, 1931. 30 claims. (Cl. 92-9).

1,795,756. Production of chemical pulp. Linn Bradley and Edward P. McKeefe, assignors to Bradley-McKeefe Corporation, New York, N. Y. Filed Sept. 2, 1926. 20 claims. (Cl. 92-11).

1,795,757. Method of bleaching and process for preparing liquors therefor. Linn Bradley and Edward P. McKeefe, assignors to Bradley-McKeefe Corporation, New York, N. Y. Filed Mar. 14, 1928. 7 claims. (Cl. 8-2).

1,795,758. Production of pulp. Linn Bradley and Edward P. McKeefe, assignors to Bradley-McKeefe Corporation, New York, N. Y. Filed Aug. 21, 1928. 33 claims. (Cl. 92-9).

1,795,838. Art of paper bags and method of producing the same. Joseph D. Cramer and Albert J. Rogers, assignors to The Chase Bag Company, New York, N. Y. Filed Sept. 12, 1929. 9 claims. (Cl. 139-420).

1,796,075. Manufacture of paper containers. Gustaf F. Blixt, Glen Rock, N. J., assignor of one-half to John J. Kriesmer, Hawthorne, N. J. Filed June 15, 1929. 6 claims. (Cl. 93-55).

1,796,080. Method of preparing watermarking plates. Howard Brown, assignor to Southworth Company, Mittineague, Mass. Filed May 15, 1930. 4 claims. (Cl. 101-401.3).

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1,796,280. Defibrating apparatus and process. George L. Blanchard, Calexico, Calif., assignor to J. G. Brittingham. Filed Apr. 29, 1929. 9 claims. (Cl. 19-44).

1,796,541. Paper-corrugating machine. Clarence J. Schoo, assignor to General Fibre Box Co., West Springfield, Mass. Filed Aug. 29, 1920. 6 claims. (Cl. 154-31).

1,796,542. Corrugated paperboard and method of making the same. Clarence J. Schoo, assignor to General Fibre Box Co., West Springfield, Mass. Filed Oct. 7, 1930. 7 claims. (Cl. 154-33).

1,796,631. Insulating material and method of making same. George B. Stryker, Jr., assignor to The Weatherproof Products Company, Memphis, Tenn. Filed July 31, 1928. 1 claim. (Cl. 154-44).

1,796,632. Log barker. Carl Busch Thorne, Hawkesbury, Ontario, Canada. Filed Oct. 20, 1928. 5 claims. (Cl. 144-208).

1,796,633. Log barker. Carl Busch Thorne, Hawkesbury, Ontario, Canada. Filed Oct. 22, 1928. 7 claims. (Cl. 144-268).

1,796,675. Composite insulating material. Charles A. Upson and Hugh M. Spencer, assignor to The Upson Company, Lockport, N. Y. Filed Aug. 14, 1928. 2 claims. (Cl. 154-44).

1,796,718. Process for the treatment of plant materials in the preparation of fibers. Dinshaw Rattonji Nanji, Headingley, Leeds, England, assignor of one-half to Duncan Maybury Stewart, London, Eng. Filed Mar. 9, 1928. 11 claims. (Cl. 92-13).

1,796,723. Method and mechanism for making envelopes. William H. Rife, Chicago, Ill. Filed May 6, 1929. 15 claims. (Cl. 93-163).

1,796,794. Packing material and method of making same. Morris Koppelman, assignor to Holed-Tite Packing Corporation, Brooklyn, N. Y. Filed July 5, 1928. 7 claims. (Cl. 92-57).

1,796,956. Method of trade-marking carbon paper. Samuel A. Neidich, assignor to Neidich Process Company, Burlington, N. J. Filed Feb. 26, 1929. 5 claims. (Cl. 282-28).

1,797,048. Method of imparting high finish to paper. Albert L. Clapp, assignor to Bennett Incorporated, Boston, Mass. Filed Feb. 19, 1926. 11 claims. (Cl. 92-40).

MARCH 24, 1931.

R18,005. Process of automatically measuring and apparatus therefor. William A. Darrah, Chicago, Ill. Original No. 1,746,525, dated Feb. 11, 1930. Application for reissue filed Dec. 26, 1930. 33 claims. (Cl. 92-46). Maintaining a constant density of material by alternating passing a beam of light through a standard and through the material to be controlled.

1,797,290. Paper-making machinery. Herman L. Kutter, assignor to The Black-Clawson Company, Hamilton, Ohio. Filed Dec. 10, 1928. 11 claims. (Cl. 92-74). Doctor.

1,797,291. Paper-making machinery. Herman L. Kutter, assignor to The Black-Clawson Company, Hamilton, Ohio. Filed Dec. 10, 1928. 6 claims. (Cl. 92-74). Doctor and frame for mounting.

1,797,662. Paper-slitting machine. Ralph S. Johnston and Samuel M. Bratton, assignors to The Pusey and Jones Corporation, Wilmington, Del. Filed Aug. 28, 1928. 6 claims. (Cl. 164-60).

1,797,678. Production of chemical pulp. Linn Bradley and Edward P. McKeefe, assignor to Bradley-McKeefe Corporation, New York, N. Y. Filed Sept. 2, 1926. 8 claims. (Cl. 92-11).

1,797,789. Manufacture of paper. Donald K. Pattillo, assignor to The Mathieson Alkali Works, Inc., New York, N. Y. Filed Jan. 12, 1928. 9 claims. (Cl. 92-20). Addition of chlorine to stock in the beater to prevent slime.

1,797,901. Manufacture of sheathing lumber from redwood bark. Elton R. Darling, assignor to Pacific Lumber Company, Chicago, Ill. Filed June 22, 1929. 10 claims. (Cl. 92-3).

1,979,941. Method of making paper boxes. Harold Carle, assignor to F. N. Burt Company, Limited, Toronto, Canada. Filed July 19, 1928. Renewed Jan. 15, 1931. 13 claims. (Cl. 93-40).

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1,798,168. Process and machine for making paper bags. George W. Poppe, assignor to Equitable Paper Bag Co., Inc., Brooklyn, N. Y. Filed Nov. 1, 1928. 16 claims. (Cl. 93-19).

1,798,440. Apparatus for vibrating fourdrinier wires. John Warren Vedder, assignor to Rice, Barton and Fales, Inc., Worcester, Mass. Filed June 27, 1930. 7 claims. (Cl. 92-45).

1,798,525. System for cooking fibrous material. Thomas Leonidas Dunbar, Watertown, N. Y. Filed Aug. 1, 1929. 19 claims. (Cl. 92-7).

1,798,544. Paper colored with sulphonic acid compounds of dyestuffs obtainable from higher molecular diarylaminobenzoquinones. George Kranzelein, Heinrich Greune, Max Thiele and Karl Hager, assignors to General Aniline Works, Inc., New York, N. Y. Filed May 29, 1929. 4 claims. (Cl. 92-21).

1,798,609. Plaster-board manufacture. Theodore E. Knowlton, assignor to Certain-Teed Products Corporation, Buffalo, N. Y. Filed Apr. 5, 1927. 6 claims. (Cl. 154-2).

1,798,801. Fourdrinier paper-making machine. Samuel Milne, Edinburg, Scotland. Filed Dec. 4, 1929. 5 claims. (Cl. 92-45).

1,798,821. Paper-manufacturing machine with raising felt. Eugene Marius Veyron, assignor to

rapeteries Navarre, Lyon, France. Filed Oct. 26, 1929. 2 claims. (Cl. 92-49).

1,798,887. Paper-making machinery. Herman L. Kutter, assignor to The Black-Clawson Company, Hamilton, O. Filed Dec. 10, 1928. 6 claims. (Cl. 92-49).

1,798,889. Method of making and impregnating paper-wrapped wire. Neil C. Lamont, assignor to National Electric Products Corporation, New York, N. Y. Filed Jan. 7, 1929. 8 claims. (Cl. 173-264).

1,798,987. Process for the manufacture of a resistant pulp for paper making. John D. Rue, assignor to The Champion Fibre Company, Canton, N. C. Filed Sept. 1, 1928. 3 claims. (Cl. 92-16).

1,798,996. Process for surface-coloring bodies. Clements Batcheller, assignor to Bemis Industries, Inc., Boston, Mass. Filed Feb. 23, 1926. 11 claims. (Cl. 91-68).

1,798,997. Surface coloration of bodies. Clements Batcheller, assignor to Bemis Industries, Inc., Boston, Mass. Filed Feb. 23, 1926, 8 claims. (Cl. 91-68).

1,798,998. Shingle and coloration thereof. Clements Batcheller, assignor to Bemis Industries, Inc., Boston, Mass. Filed June 21, 1926. 6 claims. (Cl. 91-68).

1,798,999. Surface coloration of bodies. Clements Batcheller, assignor to Bemis Industries, Inc., Boston, Mass. Filed Dec. 24, 1927. 15 claims. (Cl. 91-68).

1,799,072. Method of manufacturing shopping bags. Harford K. Steen, Newburgh, N. Y. Filed Mar. 22, 1930. 12 claims. (Cl. 93-35).

1,799,092. Long-sieve machine for the manufacture of multiple-web papers and cardboard. Paul Erkens, Duren, Germany. Filed Sept. 21, 1927. 2 claims. (Cl. 92-39).

# Delay in Filing a Patent Application

Mere delay in filing the application will not ordinarily prevent the grant of a valid patent. In fact, the laws of this country allow an inventor two years' grace after the device of the invention is placed on sale or in public use to file his application. This provision of the law has a two-fold purpose; to give the inventor ample opportunity to test the market for his invention and to prevent him from unduly prolonging the monopoly of his patent by delaying to file the application until threatened by competition.

### Two Years to Make Application

The law also gives the inventor two years after the invention is described in a printed publication or a patent to make his application. Hence, if another inventor describes the invention in a trade journal or secures a patent therefor, the first inventor has two years after the magazine is published or the patent granted to prove his own right to a patent. In case the second inventor has already filed an application or secured a patent, the first inventor to prevail must prove that not only was he the first to conceive the invention but also the first to reduce it to practice by the building of an operative device or in case he did not build an operative device, that he was exercising due diligence in building the device or in preparing to file a patent application at the time the second inventor came into the field. However, if the first inventor, after building his device, suppressed the invention until after the second inventor made his invention, he will lose his right to a patent. The same result follows if the first inventor delays filing his application until after he has practiced his invention as a trade secret for two years.

### Public Use or Sale Defeats Patent

A public use or sale is sufficient to defeat a patent whether the use or sale was with or without the knowledge or permission of the inventor. But, it must have occurred more than two years before the application was filed. It is not essential that the device was actually sold, provided it was placed on sale. However, if the use or sale occurred in a foreign country, that fact alone will not invalidate a regularly issued patent in this country, if the inventor at the time he completed the inventive act did not know of the foreign use or sale.

### Cannot Be Mitigated

A single use or sale is enough to defeat a patent and cannot be mitigated or excused. However, the Courts will in a worthy case allow an inventor a wide latitude in proving that an apparent public use was merely for the purpose of experimentation. Thus, in a celebrated case the Supreme Court saved a valuable patent for an improved paving by holding that an alleged public use in a public highway for a period of seven years was but an experimental use to test the wear and tear of the paving. Obviously, a paving cannot be tested except in a public place. However, it cannot be emphasized too strongly that if the inventor makes a device and gives or sells it to another to be used without limitation or restriction, or injunction of secrecy, and it is so used, it is a public use, even if confined to one person.

### May Prevent Obtaining Foreign Patent

Though less than two years' public use or sale of the invention will not prevent the grant of a valid patent in this country, it may indirectly prevent the obtaining of foreign patents. For instance, if the device is described in a periodical before the application is filed, patents will be refused in many of the foreign countries. Then again, some one may introduce the device into Europe and keep the inventor from obtaining patents in those countries where prior use is a bar to a patent grant. In fact, in some countries, such as England, the first one to introduce the invention into the country can obtain a patent even against the first inventor. The inventor may thus be prevented from using his own invention in those countries.

*Note: This is the eighth of a series of contributions for the general benefit of the paper industry submitted by the Technical Association of the Pulp and Paper Industry Patents Committee of which C. W. Rivise is chairman.*

## TAPPI Notes

Otto Knutz formerly assistant manager of the Corn Stalk Products Company at Danville, Ill. is to take charge of the construction of a mill to utilize the wood waste from the match factories of Fabriques Belges d'Allumettes in Brussels, Belgium. This factory is owned by Kreuger & Toll A/B, of Sweden.

Norman Clark has resigned as superintendent of the coating mill of the Standard Paper Manufacturing Company, and has not made definite plans for the future. He may be reached at 4005 Northrup street, Richmond, Va.

C. A. Blodgett, formerly of the Eastern Manufacturing Company, South Brewer, Maine has become chemical engineer of the A. P. W. Paper Company at Albany, N. Y.

H. D. Crandon has resigned as chemist of the Du Pont Viscaloid Company at Arlington, N. J., and may for the present be reached at 12 Higgins Street, Portland, Maine.

Chester Landes who has for several years been chemist at the Mead Fibre Division of the Mead Corporation has been transferred to the Harriman, Tenn. Division of the same company.

Lauri I. L. Durchman has resigned as chemical engineer from the International Paper Company, Glens Falls, N. Y. and sailed this week for Finland and the Scandinavian countries where he will devote the summer to studying the new mills that have been built in those countries. He is planning to return in the fall.

J. A. Bardsley who has been engineer at the Wayagamac Division of the Canada Power and Paper Company has been transferred to the Laurentide Division of the same company.

Gerald Haywood who has been located in the research laboratories of the West Virginia Pulp and Paper Company in New York City, has been transferred to the Piedmont, W. Va. mill of this company.

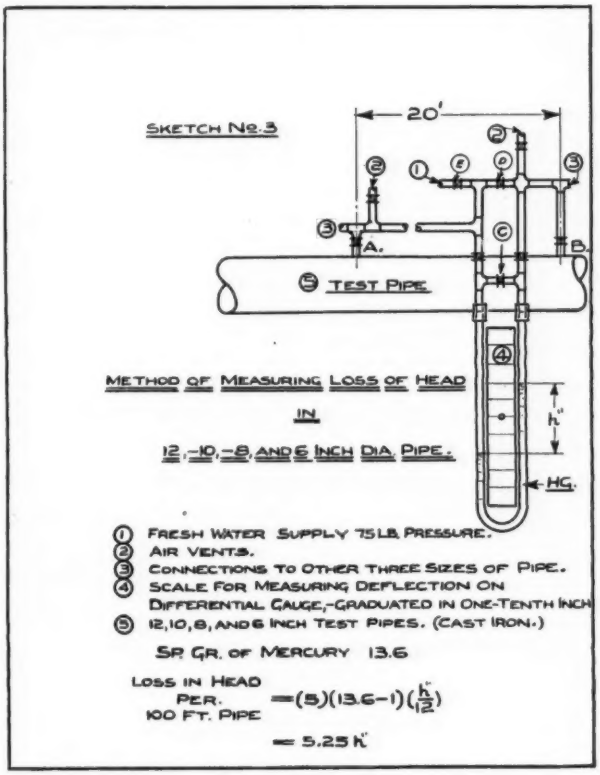
### New Pulp Mill Planned

T. Howland, of Minneapolis, is investigating the possibilities of establishing a pulp and paper mill at Fernie, British Columbia, according to information published here. The government timber cruises that have been carried on during the past two years on the Elk and tributary rivers near Fernie have confirmed former claims of large quantities of spruce, balsam, pine and other pulpwood raw materials. Sufficient power is available by the East Kootenay Power Company in the event of a mill being established.

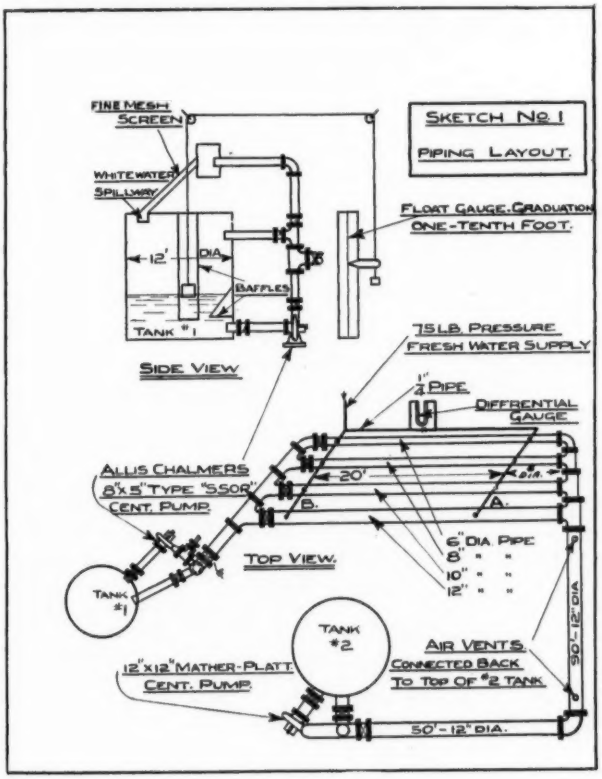
# Friction Losses In Cast Iron Pipe Carrying Paper Stock*

By Frank Forrest[1] and G. A. H. Grierson[2]

For a good many years, tables have been available from which the friction of clear water through piping could be figured with reasonable accuracy. Tables have also been made up giving the friction of oil through piping, but there has been a decided lack of data from which the friction of the different kinds and consistencies of stock pumped in the paper industry could be computed with some assurance that the result would be about right. When the heavier stock was handled by plunger pumps, accurate determination of the friction loss was not absolutely essential as with a big enough pump and by using sufficient power it would be possible to handle the desired quantity of stock. When, however, centrifugal pumps began to come into use then it was found that if the pumping head was higher than expected the desired quantity of stock would not be delivered and the necessity of having more accurate data from which friction losses could be computed was of major importance. The first research in this direction so far as published data is concerned was made in 1907 by E. J. Trimbey on the losses of news print stock of varying consistencies and velocities through spiral riveted pipe. These tests are no doubt quite accurate for the kind of stock and the kind of pipe used and for conditions similar to those under which the tests were run, but the data obtained is of course rather limited in its application. There are other kinds of stock in the paper industry than news print, and other kinds of pipe besides spiral riveted, the more commonly used being cast iron. For this reason the Allis-Chalmers Manufacturing Company decided it would be desirable to find out the friction losses in cast iron pipe carrying various percentages of sulphite and groundwood stock at varying velocities.


SKETCH No. 3
20'
TEST PIPE
METHOD OF MEASURING LOSS OF HEAD IN 12, 10, 8, AND 6 INCH DIA. PIPE.
h"
HG.
1 FRESH WATER SUPPLY 75 LB. PRESSURE.
2 AIR VENTS.
3 CONNECTIONS TO OTHER THREE SIZES OF PIPE.
4 SCALE FOR MEASURING DEFLECTION ON DIFFERENTIAL GAUGE,-GRADUATED IN ONE-TENTH INCH
5 12, 10, 8, AND 6 INCH TEST PIPES. (CAST IRON.)
SP. GR. OF MERCURY 13.6
LOSS IN HEAD PER. 100 FT. PIPE = (5)(13.6-1)(h"/12)
= 5.25 h"

SKETCH 3




SKETCH 1

## Experiments at Abitibi Mill

The proposed tests were arranged for in conjunction with the Canadian Allis-Chalmers Company, Ltd., at the mill of the Abitibi Power and Paper Company, Iroquois Falls, Ontario, Canada. They were run in 1927 by Mr. Frank Forrest of the Allis-Chalmers Manufacturing Company, Milwaukee, Mr. G. A. H. Grierson, and Mr. W. Dryer of the Canadian Allis-Chalmers Company, Limited, and extended over a period of three months. The Abitibi Power and Paper Company furnished the space, tanks, piping, and one of the pumps, also the necessary stock to conduct the tests. The test arrangement is shown by sketch No. 1 "Piping Layout." Equipment consisted of tank No. 2, a 12 inch Mather Platt pump pumping out of this tank through a 12 inch pipe ending in a Manifold made up of reducing tees from which different sizes of straight lengths of cast iron pipe led off and were joined again in a header going to tank No. 1. An 8 inch by 5 inch Allis-Chalmers stock pump was used to pump the stock back from tank No. 1 to tank No. 2. The stock

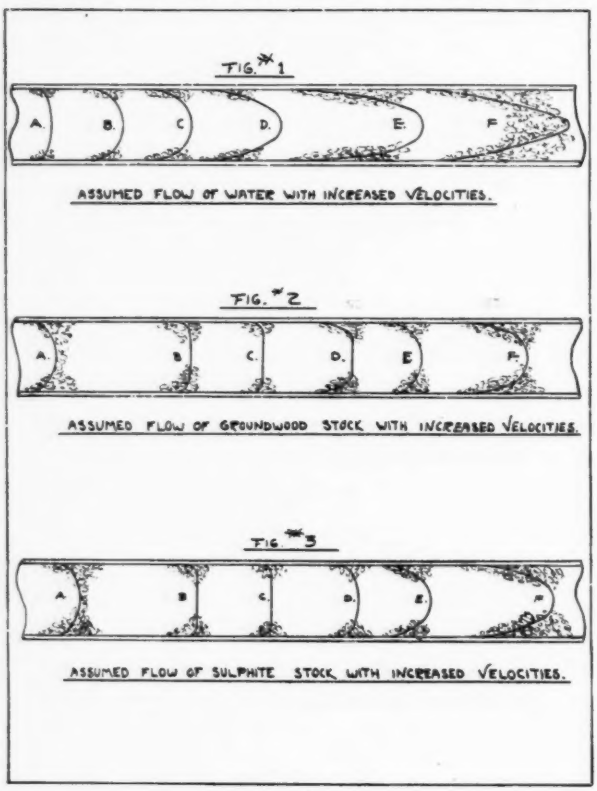


* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., Feb. 17-19, 1931. Contribution of the Heat and Power Committee.

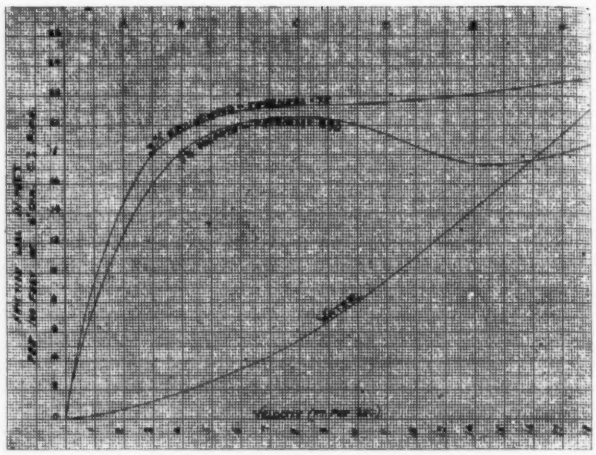
[1] Engineer, Allis-Chalmers Mfg. Co., Milwaukee, Wis.
[2] Engineer, Canadian Allis Chalmers Co., Toronto, Ont.

was mixed for different consistencies in tank No. 1 and pumped to tank No. 2 where it was agitated and then pumped back to tank No. 1. All readings of friction losses were taken when pumping from tank No. 2 to tank No. 1. A distance of from 6 to 8 pipe diameters was allowed ahead of the first gage connections after the stock left the manifold so the stock would resume normal flow after passing around the tee fittings. Sketch No. 3 shows the connections for the mercury manometer used to determine the drop in head through 20 feet of straight pipe between the gauge connections. The manometer was connected up as a differential gauge to read this friction loss directly. The methods of taking readings after the pump was pumping a fixed capacity through the pipe being investigated were as follows:

Referring to sketch 3, all valves on gauge connection lines were opened with the exception of "A" and "B". This allowed clear water to flow throughout the connecting system and out at air vents No. 2 freeing the complete system of all air and stock. Then valves No. 2 were closed, building up 75 pounds water pressure on both sides of the differential gauge. Next, valve "D" was closed and valves "A" and "B" opened. This allowed a flow of clear water into the test pipe which cleared the gauge connections of all stock. Then valves "E" and "C" were closed, simultaneously cutting off the clear water supply and also the jumper connection between the two legs of the differential gauge which allowed pressure at point "B" to act on one side of the gauge and pressure at point "A" to act on the other side of the gauge, the difference between these two pressures which was the friction loss between points "A" and "B", being registered on the differential gauge. Points "A" and "B" were placed exactly 20 feet apart so that the gauge reading was the friction loss of the quantity of stock being pumped in 20 feet of pipe. The quantity pumped was measured by displacement in tank No. 1. The method as outlined above was followed for taking every reading. Loss through different




FIGS. 1, 2 AND 3



CURVES SHOWING FRICTION LOSSES

sizes of pipe were determined in this way, for white water, groundwood, and sulphite stocks up to 5.8 per cent bone dry consistency. To obtain the different consistencies of stock tested, the stock was obtained from the mill and placed in tank No. 2. It was then pumped to tank No. 1, and to obtain thinner stock, water was added. To obtain thicker stock valve "G" (sketch No. 1) was closed and the stock pumped to a head box discharging on an inclined screen which allowed the white water to be drained off and the thicker stock to drop back into tank No. 1. When about the desired consistency was obtained, the stock was pumped from tank No. 1 to tank No. 2 and back again several times until the consistency was uniform before a test run was made. The float gauge shown on tank No. 1 was only used up to about 2½ per cent consistency. For higher consistencies the rise in tank No. 1 was measured with a rule. Throughout the complete series of tests on groundwood and sulphite, the freeness of the stock was checked regularly, and if any change whatever was noted a new supply of stock was furnished by the mill. The freeness was determined by a freeness tester approved by the Canadian Forest Laboratories.

Regarding the pipe used in these tests, the 6 inch pipe was new pipe, the other sizes were old pipe. For this reason preliminary tests were run pumping clear water to determine the co-efficient of friction as referred to Williams and Hazens value of the co-efficient C. This co-efficient was found to be approximately 140 for the 6 inch pipe, 100 for the 8 inch pipe, and 90 for the 10 and 12 inch pipes. In plotting the curves made from the data taken, this data was all put on the basis of co-efficient C=100 using direct ratios as obtained above. This may not be absolutely correct, but such checks as have been subsequently made show this assumption gives quite accurate results.

The curves mentioned have been published in pamphlet form, Allis-Chalmers bulletin number 1649. Gallons per minute is plotted as abscissa, friction loss as ordinates, and curves are given for both groundwood and sulphite of varying consistencies through 6 inch, 8 inch, 10 inch, and 12 inch cast iron pipe. Regarding the estimated friction losses given for elbows and tees, these are more or less rule of thumb based on our experience. Such checks as we have made so far show that results obtained by figuring losses in the fittings mentioned as outlined give results which are on the safe side.

These curves mentioned have been used for nearly four years and will, we believe, give results which should in general be found sufficiently accurate, but there are so many factors involved that for special conditions some correction of results might be necessary. (See paragraph 369 of the Standards of the Hydraulic Society.) Undoubtedly also additional tests will

be run from time to time which will supply additional data but as a considerable start in giving more data than is available in the Trimbey curves, those we are now making available should be a valuable contribution to the subject.

### Peculiarities of Curves

It will be noted that there is an apparent inconsistency in the curves, because for some values these stock frictions are less than for water. Moreover, in the case of sulphite stocks there is a decided "hump" in the curves.

Referring to Fig. 1, we have attempted to show the flow of water at various velocities through a pipe line, indicating the velocity diagram and the turbulence existing at these points.

These points we have designated as A-B-C-D-E and F which correspond to velocities shown on curve sheet as 2-4-8-11-14 and 17 feet per second respectively.

It is a known fact that water reaches a slightly turbulent stage at very low velocities and that this turbulence increases very rapidly with increased velocities. It is for this reason that the water friction curve gradually increases in slope as the velocity increases.

The curve drawn shows the characteristics of flow of water, 3 per cent groundwood stock, and 3 per cent sulphite stock through an eight inch pipe line. You will note that on ground wood stock the friction increases very rapidly at low velocities up to about three feet per second. This indicates a very turbulent flow which can best be observed in the flow of stock around a beater wall. The reason for turbulent flow at these low velocities is that owing to the slow motion forward the stock has ample time to form in small ball like shapes. These balls rub against the side of the pipe, turning, which also turns the ball next to it and so on across the entire pipe cross section. This flow is indicated at position (A).

After the flow reaches about three feet per second the slope of the friction curve tends to flatten out, in other words, the turbulence is becoming less and the flow is approaching the movement of a plug as shown in position "B". At eight feet per second this turbulence reaches a minimum and the friction curve is nearly flat, (position "C"). With increased velocity turbulence again takes place acting from the pipe wall inward. Consequently the slope of the friction curve begins to rise as shown at (D) (E) (F), however, it is not so violent as in the case of water flow due to the fact that the fiber contained, composing the stock, cuts this turbulence below that of water at the same velocity. This explains the fact that the friction of stock becomes less than water friction through the same pipe at high velocities.

Referring to the sulphite friction curve, you will note that at low velocities up to eight feet per second the shape of the curve is the same as for groundwood, the only difference being that sulphite friction is slightly less than groundwood. This, I think can be attributed to the different fiber characteristics. Beyond eight feet per second and up to fourteen feet per second the friction becomes less as the velocity increases. This is due to the extreme freeness of a sulphite stock, which characteristic allows the fiber to be drawn toward the center of the pipe caused by the wedge shaped flow as indicated at (D) and (E) Fig. 3. In other words the fiber that is flowing fast tends to catch and drag along its neighboring fiber in the lower velocity area. This characteristic results in a much higher consistency stock at the center than at the pipe wall which in turn will lower the friction to the point (E) where the turbulent action more than offsets this gain set forth above. The curve then slopes upward in about direct ratio to the groundwood curve, however, at considerably lower values of head loss.

The above explanations are based on an average consistency of 3 per cent (bone dry), however, you will note from the friction curves in bulletin 1649 the above characteristics apply at all consistencies.

Up to about 1½ per cent the characteristics of flow are much the same as water only that the fibers contained reduce the turbulent motion consequently reducing the pipe friction.

The above is merely the theory of our engineers to account for the peculiar shape of the curves and it may be that some other hypothesis will fit the situation better.

"The Allis-Chalmers Manufacturing Company does not guarantee the accuracy of these curves, but does state that the observations were carefully made, the data thoroughly checked, and the results conveniently plotted. We are making additional tests in this field and will undoubtedly have occasion to correct the above curves from time to time."

# Pulp Testing Committee Annual Report*

With the action of our executive committee in reorganizing the committee structure of our association last spring the committee designated "physical standards for pulp" of the two previous years was expanded as to its scope of activities by being renamed "pulp testing." This change in policy and alteration as to name places upon our group of twelve committeemen the responsibility and added opportunity for striving to aid TAPPI by selecting preferred chemical as well as physical tests for pulps of various kinds used in the paper industry.

### Physical Tests

This expansion in the field of our activities leaves each committee member just as eager as ever to continue with our program of endeavor in attempting to provide the industry with a set of three optional pulp strength testing procedures, namely (1) an initial, unbeaten, or felting test, (2) a pebble mill test and (3) a beater type of test.

### Initial Test

The initial or unbeaten test under the committee leadership of Gosta P. Genberg was adopted by his committee as a tentative standard method three years ago. It has been used in numerous pulp and paper mills, particularly in United States and Canada. It seems to be popular in modern high speed newsprint mills and in those fine paper mills where the wet processing of fibre in preparing it for the paper machine calls for relatively little or short time work on the part of the beater.

A rival of the Genberg and Laymon initial test has made its appearance in England, Europe and Scandinavian countries as developed by the pulp evaluation committee of the Paper Makers' Association of Great Britain and Ireland. These two sets of apparatus and procedures for the initial test are being compared in a critical and impartial way in one of our Ohio mills with ardent advocates of each method working literally side by side. Our pulp testing committee awaits with deep interest a promised report covering this systematic comparison of the two methods. Further action on our part in making recommendations for what appears to be the better or for a compromise procedure possessing the better features of each naturally is awaiting the appearance of this report or of a similar report from our Canadian colleagues.

### Pebble Mill Test

It was hoped that by this time a specific pebble mill method of pulp testing would have received the close attention of our committee. Recently in communicating with the firm selling the Type "C" porcelain jar so popular in the pebble mill testing of pulp in this country a suggestion was made by one of its executives that we

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., February 17-19, 1931.

make use of molded porcelain balls of spherical shape in place of the irregularly shaped flint pebbles. Sample balls were submitted weighing 44.0 grams each and having a diameter of 1.25 inch (One hundred and three such balls thus weighing approximately ten pounds). The surface of these molded balls is as smooth as could be desired with but slight evidence of mold marks.

Surely the wet coefficient of friction between the fiber and porcelain surfaces is of the same order of magnitude as that between the fibre and flint pebble surfaces. The use of metal spheres for pulp testing in a metal or in a porcelain jar is thought to be less effective in developing high tensile, bursting or folding strength values, because of the balls being too heavy in density and the wet coefficient of friction between metal and fiber being too low. These ideas are speculative in nature, but could well be investigated in some college or industrial research laboratory to advantage.

The inconvenience in trying to select 75 to 77 pebbles fairly uniform in size and reasonably free from flat surfaces or free of other blemishes such as to give a total weight of ten pounds as specified in one pebble mill test procedure proposed five years ago leads one to rejoice at the thought that the substitution of these artificial porcelain balls, providing that they wear down about as slowly as the flint pebbles, will enable us to look on the ball mill with the new balls as a precision testing apparatus of simple design which should no longer fail to give checking results in two or more laboratories where representative portions of a given pulp sample are being tested for strength acording to identicl methods of processing.

It is hoped that within the coming year the use of porcelain spheres for pulp testing in a Type "C" jar mill will be tried by one or more of our committee members or others in the Association, so that an improved ball mill strength testing procedure may be arranged, tried and, if satisfactory, be submitted to vote as one of the three preferred strength determination methods.

H. C. Bradford and others have observed that the porcelain pebble mill is capable of increasing the strength of a given pulp at a rate approximately twice as great as that found in using the 1½ pound Niagara type beater with controlled bed plate. Consequently, laboratories working with pulps that hydrate slowly, undoubtedly will prefer using the ball mill to the experimental beater where the maximum Mullen or tensile strength should be reached and passed within a 60 to 90 minute milling period.

### Small Beater Test

In trying out the beater method of testing pulp proposed as a compromise procedure by the pulp testing committee a year ago it was found and reported by two of our committee (Moore and Willets) that the consistency recommended (2.5 per cent air dry pulp) in operating the beater was too high for good circulation at least after removing the required volume of stock for the making of several sets of test sheets. To remedy this situation they have modified the original routine of testing in a few important respects, so that now with these alterations which have been accepted by the required two-thirds of our committee, a revised beater procedure is available to the Association which Moore and Willets have demonstrated will work in a satisfactory way with even the slow hydrating kraft pulps.

It is suggested by another member of our committee, Mr. Rothchild, who has had wide experience in using the small Niagara beater for pulp testing that the words "stainless steel" should be used in addition to "monel metal" as the material of which the beater roll bars and bed plate bars are to be made for standard equipment. Before acting on this suggestion it would be well to investigate the relative effects of beating a given pulp with both kinds of metal for the beater tackle. In case the two metals are found to give substantially equivalent results there should be no objection to making this addition to our tentative beater specifications.

### Future Plans for Physical Tests

In addition to establishing, if possible, an acceptable ball mill method of testing pulp it is the object of our committee to ultimately provide for the following two sections of a general testing scheme which should become standard procedure regardless of which of the three optional pulp processing methods is followed:

I. Method of sampling pulp.

II. Apparatus and methods used in making and conditioning the test sheets.

Holding these two sections until last for action on the part of our committee may seem like "putting the cart before the horse." Our reason, however, for doing this is to leave until last an item (Section II) which probably will lead to wide differences of opinion or preference both in the committee and within the membership of the entire association.

Aside from completing our work on methods of determining strength characteristics of pulp other types of physical tests which we should consider for adoption by TAPPI are:

A. Color of pulp (by rotating disk method, by Hess-Ives type of instrument or better by some photoelectric cell apparatus).

B. Dirt content of pulp.

C. Freeness value of pulp (by means of Canadian standard freeness tester, Schopper-Riegler freeness tester, Williams precision tester or rate of flow as by method recently developed by the U. S. Forest Products Laboratory).

D. Screen analysis as by the Forest Prdoucts Laboratory method which was recently published.

E. Sedimentation test.

F. Strength qualities of pulp by static bending test of the Forest Products Laboratory.

G. Any other physical test or tests for pulp that may have been overlooked in the above outline or ones of a new and novel nature that may be developed and described in future years.

### Chemical Tests

During the past year three methods of a chemical nature for application to pulp have been acted upon favorably as tentative standard methods by the Pulp Testing Committee with at least two-thirds of the committee voting in the affirmative. These methods are:

1. Isolation of Cellulose by Chlorination Method (Paper Trade Jour *91*, No. 11, pp. 81 & 82 (Sept. 11, 1930).

2. Chlorine Consumption of Pulp (This follows the previous method on page 82 of the above issue of Paper Trade Journal).

3. Alpha Cellulose in Pulp (Sponsored by W. R. Willets and to be presented at TAPPI Convention Feb. 17-19, 1931).

A fourth method—"Pitch Content of Pulp" is being worked up by one of our committeemen, Mr. H. W. Laymon, at the present time.

The following other chemical tests should also be carefully considered as possible tentative standard methods: 5. Acid hydrolysis, 6. Alcohol-benzene solubility, 7. Alkali solubility in 1 per cent NaOH, 8. Alkali solubility in 1 per cent NaOH corrected for water solubility, 9. Ash, 10. *Beta-* and *gamma-* celluloses, 11. Bleach consumption (based on 35 per cent available chlorine content in calcium hypochlorite), 12. Copper number, 13. Ether solubility, 14. Lignin, 15. Methoxyl group, 16. Moisture content, 17. Pentosan and methyl-pantosans, 18. Permanganate number, 19. Potassium hydroxide (10 per cent) solubility, 20. Viscosity in cuprammonium hydroxide, 21. Water solubility-cold, 22. Water solubility-hot, 23. Methods or tests unintentionally omitted from the above list or new ones to be described at later dates.

It is hoped that in a few years your pulp testing committee will have carefully selected what it regards as the best of each type of chemical or physical test for pulp. With many of these selected methods adopted by the Committee as tentative standard or approved methods or accepted by TAPPI as standard methods it would be a distinct service to the manufacturers and consumers of pulp to have those methods assembled in book form just as we now have available a book of TAPPI standard paper testing methods.

DONALD E. CABLE, CHAIRMAN.

# Current Paper Trade Literature

## Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts and Bibliography of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

**For photostatic copies of articles appearing in the Abstracts Section, address the chairman of the Abstracts Committee, Dr. Clarence J. West, National Research Council, 21st and B Streets, Washington, D. C. The charge for this service is as follows: 9 x 11 inches, 18 cents each; 18 x 11 inches, 35 cents each; 22 x 18 inches, 70 cents each; minimum charge, 50 cents. Copies of United States patents may be obtained from the U. S. Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.**

### Sulphite Process

**Process in the Manufacture of Sulphate Pulp, When the Cooking Liquor for the Sulphite Process is Composed of an Alkaline, Neutral or Sulphur Dioxide Acid Solution of Sodium Sulphite.** Stora Kopparbergs Bergslags A.Bol. Swed. pat. 70,061 (March 1, 1929).—The sulphite or sulphate waste liquor (black liquor) or both are thickened, finally completely dried by evaporation and carbonization and burned in a reducing atmosphere. The resulting substance is dissolved in water, the soda is crystallized out from the solution or a part of it, dissolved in water and made into sodium sulphite, that is sodium bisulphite for the sulphite cooking process by introducing sulphur dioxide into the solution. The mother liquor remaining after the crystallization, facture of sulphate cooking liquor after this liquor has been or a part of it, rich in sodium sulphide finds use in the manucaustisized.—J.F.O.

**Treatment of Sulphite Waste Liquor.** Guy C. Howard. Can. pat. 304,644 (Oct. 7, 1930).—Sulphite waste liquor is allowed to react with a caustic lime reagent in solid phase until a heavy crystalline precipitate is formed and the liquor is alkaline; the precipitate is separated and the residual liquor allowed to react with caustic lime reagent in solid phase until a flocculated lignin-containing precipitate has been formed, the latter being in quantity sufficient to cause a masking of the reaction surface of the reagent particles resulting in a material lag in the reaction; such precipitated matter is separated and caustic lime in solid phase is added to the residual liquor, whereby a further and practically complete precipitation of the lignin constituent of the liquor takes place; finally the precipitate is separated.

**Recovery of Rosin Soap from Spent Pulp Liquors.** Viggo Drewsen assignor to West Virginia Pulp and Paper Co. U.S. pat. 1,778,523 (Oct. 14, 1930).—Spent wood-treating liquor, such as sulphite waste liquor from coniferous wood, is concentrated to a specific gravity of about 1.1 to 1.15 to give a density different from that of the soap, and centrifugal separation is effected at a temperature between 25 degrees and 60 degrees C.—A.P.-C.

**Process for the Manufacture of Combustible Briquetts from Wood Refuse and Sulphite Waste Liquor.** R. W. Strehlenert. Swed. pat. 69,274 (May 18, 1926).—A relation between sulphite waste liquor and the wood refuse mixed together is held at about 42 to 58.—J.F.O.

**The Progress Made in the Combustion of Sulphite Waste Liquor.** J. Hausen, Berlin. Papier-fabr. 28, No. 40, 632-634, (Oct. 5, 1930).—After a discussion of the newer methods of burning the dry powder resulting from the evaporation of the waste sulphite liquor, the author gives comprehensive results on some tests made in burning the powder in boilers. The results of two tests are given, in one a chain grate was used and in the other the powder was burned as pulverized coal. In conclusion the economical question of burning sulphite waste liquor is discussed. The heating value is roughly one fourth that of coal.—J.F.O.

**Process for the Carbonization of Raw or Dilute Sulphite Waste Liquor in Which the Sugar Has Been Removed.** C. G. Schwalbe. Aust. pat. 118,235 (Feb. 15, 1930).—Quantities of sulphuric acid are added to the liquor, which, calculated on the 100 parts of sulphite waste liquor by volume are greater than .5 and less than 3.6 parts by weight, and after separation of the lime sludge and the addition of absorption carbon clay and similar materials, it is heated to 180 degrees C. for eight hours.—J.F.O.

**Process for the Manufacture of Bleached Ground Wood Suitable for Production of News Print Free from Chemical Pulp.** Ernest Eigerus. Finn. pat. 12,994 (Sept. 26, 1928).—A ground wood is used which is treated with the waste liquor from the sulphite mill whereby the pressure necessary for the penetration of the liquor is supplied by a pump.—J.F.O.

**Process for the Manufacture of a Combustible Substance from Wood Waste and Sulphite Waste Liquor.** R. W. Strehlenert. Swed. pat. 70,033 and 70,034 (Nov. 9, 1926, March 20, 1928). Addition to Swed. pat. 69,274.—Deviating from the main patent, the mixture of wood waste and sulphite waste liquor, the latter being added in a quantity which was added up to 25 per cent of the drying substance of the mixture, was directly dried and carbonated in order to obtain a starting product which was suitable for an amorphous substance instead of briquettes.—J.F.O.

**Process for the Manufacture of Pulp, Utilization of the Substances Dissolved in the Waste Liquor and the Recovery of Chemicals.** G. Haglund. Fin. pat. 12,923 (April 23, 1928).—After the waste cooking liquor is thickened to the desired degree, the organic materials present are decomposed and precipitated out in an easily separated form and washed, while the volatile acids (acetic, formic) and released sulphur dioxide gas or hydrogen sulphide (according to the source of the cooking liquor) is absorbed.—J.F.O.

**Process for the Purification of Raw Cymene Derived from the Manufacture of Sulphite Pulp.** Metalgesllschaft A.G. Aust. pat. 117,069 (Nov. 15, 1929).—The cymene which has been suitably purified by steam distillation is saturated with hydrogen chloride gas, then again distilled with steam and finally neutralized by alkalies and washed. In this manner it is possible to obtain the cymene from the raw material in pure form without any loss. The process also allows the recovery of accompanying substances. One hundred kilograms of technical pure cymene yields 77 kilograms of chemically pure cymene and 13 kilograms of by-products.—J.F.O.

**Process for the Separation of Organic Materials from the Sulphite Waste Liquor.** Carl G. Schwalbe. Ger. pat. 499,886 (Nov. 4, 1926).—The raw sulphite waste liquor or the liquor obtained after removing the sugar from the liquor is heated for 4 to 5 hours at a pressure of 5 to 10 atmospheres and then caustic alkali is added and it is again heated with or without pressure. The precipitate of organic matter which is formed, is separated from the liquor in the usual manner by filtration.—J.F.O.

**Process for the Manufacture of Yeast from the Use of Sulphite Waste Liquor.** A.Bol. Basta. Swed. pat. 69,371 (Oct. 1, 1925).—During the yeast culture, a yeast cake is added which contains a high content of organic nitrogen (albuminous sub-

stances). This additional yeast is added to supply the nitrogen during the first stages.—J.F.O.

**Process for the Manufacture of Yeast from Sulphite Waste Liquor, or from Other Sugar Solutions Obtained from Wood.** A.Bol. Basta. Nor. pat. 47,526, (March 27, 1926).—The deposited yeast is evolved in a solution with higher sugar content than the solution of waste liquor into which it is then added where it is brought to further development. After the beginning of the formation, wholly or partially neutralized sulphite waste liquor is added in portions or continuously; whereupon the yeast obtained is washed and separated.—J.F.O.

**Process for the Manufacture of Yeast.** A.Bol. Basta. Aust. pat. 118,863 (Aug. 15, 1929).—Sulphite waste liquor or other solutions from wood which contains sugar are the starting products. The yeast culture follows under violent aeration so that not only is the formation of alcohol considerably hindered, but also during the fermentation the sulphur dioxide gas and other poisonous substances forming are continually removed. A thorough washing removes the sulphur dioxide adhering as well as the gas found in the inner part of the yeast cell.—J.F.O.

**Utilizing Fuel Value of Waste Sulphite Liquor.** Herbert S. Kimball. Paper Trade J. 92, No. 8, 124-127 (Feb. 19, 1931).—The details of Khules' process (Power, Sept. 16, 1930) for the concentration and drying of sulphite waste liquor are interpreted in terms of American practice, the calculations being based on the waste liquor output of a 50-ton sulphite mill. It is estimated there can be generated 13,063 lbs. of steam net per hour, at a cost of $2.65, or about $0.20 per 1000 lbs.—A.P.-C.

**Waste Liquors and Gases of the Paper Industry.** Clarence J. West. National Research Council, Washington, D. C. Paper Trade J. 92, No. 3, 48-56 (Jan. 15); No. 4, 50-56 (Jan. 22); No. 5, 46-51 (Jan. 29, 1931).—Abstracts are given of 350 United States, Canadian, British, German, French, Swedish, Norwegian, Austrian and Swiss patents, issued during the period 1925, to 1930, compiled from Paper Trade Journal, Chemical Abstracts and Papier-Fabrikant. Author and subject indexes are appended. —A.P.-C.

### Mechanical Process

**Magazine Grinders Suitable for Handling Square and Split Wood.** Pulp Paper Mag. Can. 30: 643, 650 (Dec. 4, 1930).—A 32-hour test (2 grinders operated simultaneously for 16 hours) was run on Waterous hydraulic-type magazine grinders at the mill of the Lake St. John Division of the St. Lawrence Corp., Dolbeau, Que. A total of 28.97 cords of mixed square, slab and round wood produced 32.4 tons of pulp with a consumption of 55.1 horsepower per ton. The only difficulty encountered was when a lot of square wood was charged together and reached the pressure foot; but this was eliminated by mixing square timber and slabs or by loading large and small square indiscriminately. There was no appreciable change in the quality of the pulp.—A.P.-C.

**Bleached Groundwood Pulp.** A. O. Bragg. Pulp Paper Mag. Can. 30: 535-537, 554 (Nov. 6, 1930).—A description of its manufacture, properties and applications.—A.P.-C.

**Studies in the Manufacture of Groundwood Pulp.** H. Wyatt Johnston. Pulp Paper Mag. Can. 31, 221-232 (Feb. 5, 1931).—An exhaustive analysis of the program which has been mapped out for the investigation of groundwood manufacture at the Forest Products Laboratories. The problem is being considered from the standpoints of: definition of pulp quality, definition of stone quality, and process variables as factors of operation. Each of these points is discussed, indicating the value of the various tests for practical purposes, showing the function and effects of size and shape of grit and of strength of bond of pulp stones, and reviewing the results and opinions of previous investigators on the effects of stone surface, peripheral speed, pressure of the wood against the stone, temperature of grinding and white water.—A.P.-C.

**Concerning the Grinding of Pulp Wood and the Beating of Paper Stock.** Ludw. E. Walter. Papier-Fabr. 28, No. 43: 667-678, (Oct. 26, 1930).—The erronious conception, that in the grinding of pulp wood and the beating of paper stock all the unused energy is converted into heat is discussed and refuted by the author. The author contends that this energy is used up as surface energy, that is, the energy used in making the fibres smaller, into "flower," etc.—J.F.O.

**Some Factors Affecting the Strength of Groundwood.** A Ruby. Papier 33, 1283-1300 (Dec., 1930).—A review of the effects of the species of wood, conditions of growth, age, dryness and state of preservation of the wood, barking, nature, dressing and speed of the stone, grinding pressure and temperature, screening and refining of the groundwood, and conditions of storing.—A.P.-C.

**The Inter Relation of the Most Important Properties of Groundwood.** Fridolin Strauch, Murztaler Holstoff und Papierfabriks A. G. Wochbl. Papierfabr. 61, Special No., 108-115 (June 25, 1930).—A discussion of twelve factors relating to the quality of the groundwood produced is given. By a series of complete curves and figures the author then evolves the following facts. (1) The quality of ground wood made per 24 hours is dependent on the load and temperature. (2) The Schopper-Riegler degree falls with increase in temperature and rises with increase in dilution water. (3) The Schopper-Riegler degree is dependent on the load and the amount of wood ground. (4) The tearing length is dependent on the load and temperature of the stock from the trough. Most if not all of the facts dwelled upon are already known, however the article is of value for its comprehensive series of curves and data.—J.F.O.

**Applying Mechanical Means to the Transportation of Wood from the Storage Piles in Groundwood Miils.** Rolf Niethammer. Wochbl Papierfabr. 61, Special No., 58-71, (June 25, 1930). A very comprehensive description of the various mechanical devices for conveying and piling the wood discussed, from narrow gauge tracks to the large overhead cranes. By a series of curves, the author has shown which method to use for certain wood consumption. For a consumption up to 50 cords per day, the narrow gauge track system is recommended; for a consumption of 50 to 550 cords, the trough and intersectional line system is best and for wood consumptions above 550 cords per day, the cable crane and bridge crane are the most suitable. A great number of photographs accompanies the article.—J.F.O.

**Results Obtained in Practice in the Manufacture of Rotation Paper in a Mill with a Groundwood Department.** Walter Zemritski. Wochbl Papierfabr. 61, Special No., 47 (June 25, 1930). To produce one ton of ground wood, 80 horsepower is required. For 100 pounds of paper produced, 65 pounds of solid rosin, 1.59 pounds of alum of 18 per cent strength, and 14.8 pounds of Kaolin are necessary. The steam consumption is 3.7 pounds per pound of paper. For the furnish, 28 pounds of sulphite, 65 pounds of ground wood and 15 pounds of kaolin, in all 108 pounds, are used to produce 100 pounds of paper. For electrical generation and drying, 96 pounds of coal is used. One cubic meter of wood yields 250 to 275 kilograms of screened ground wood, corresponding to 333 to 367 kilograms of wood per solid cubic meter.—J.F.O.

**Arrangements for the Protection Against Over Loading of the Electric Feed Motor of a Continuous Grinder for the Manufacture of Groundwood.** A. G. Brown Boveri & Co. Aust. pat. 118,454. The device consists of an automatic electric regulator for the feed motor; dependent on its own speed of rotation which is influenced by a device acting like a dynamometer.—J.F.O.

**Automatic Control Process for Pressure Grinders.** Walter Brecht and Erich Schaun. Wochbl Papierfabr. 61, Special No., 99-108, (June 25, 1930).—As an introduction the authors mention the polemic over continuous versus pocket grinders, believing that as regards quality, the continuous grinders although possessing other advantages, are inferior to the pocket grinders, or pressure grinders. Sensing the need for control apparatus on pressure

grinders similar to that already existing on continuous grinders, the authors describe such a method of control.

By a series of equations the authors show that the wood ground is proportional to the volume of water consumed per minute in the pressure piston. Curves are drawn up to illustrate the relation of the pulp quality to the speed of the piston, that is, to the quantity of water used in the pressure piston. Tearing tests and freeness tests are made and photographs made of the samples, everything tending to corroborate the authors in their assertion that pulp quality is proportional to the quantity of water consumed per minute in the pressure piston. In conclusion the method, whereby the flow of water in the pressure piston is registered on a chart is described in detail with many diagrams.—J.F.O.

**Automatic Control System for Hydraulic Grinders, "Pocket Grinders."** Klimpke. Wochbl Papier-fabr. 61, No. 36; 1162-1163, (Sept. 6, 1930).—The author states that the automatic control system of Brecht, as published in Wochbl Papierfabr. No. 25A of 1930, is not a new thing; having already been manufactured and used for a number of years, but with the added advantage of the use of oil in the pistons in place of water. Thus giving a more accurate control since water tight pistons are extremely difficult to keep tight. Furthermore the author believes in the future of the pocket grinders because of their much lower initial cost and the superior quality of fibers produced, this more offsets the greater production of the continuous grinders.—J.F.O.

**Load-Regulating Means for Pulp Grinders.** Frank A. Peschl. U. S. pat. 1,777,220, Sept. 30, 1930.—The invention provides means for the independent regulation for variations in load on two grinders mounted on a common shaft and driven by the same motor. The impulse for controlling the grinder farthest away from the driving motor is obtained by interposing in the shaft between the two grinders a yielding coupling, the parts of which will move relatively to each other if the load on the remote stone changes. This relative motion operates mechanism which varies the torque of the wood-feeding motor so as to restore the load of the grinder to its proper value. The controlling impulse for the other stone is obtained from the power line supplying current to the motor driving the grinders; variations in this current are made to adjust the torque of the wood-feeding motor or to operate valves controlling the supply of pressure fluid when such is used for feeding the wood. This impulse obtained from the power line of the grinder-driving motor is a total impulse, that is, the impulse from both stones; but the electrically operated controlling mechanism acts on the feed mechanism of the stone only which is nearest the stone-driving motor because means are provided to deduct, in the controlling action, the impulse produced by the remote stone from the total impulse.—A.P.-C.

**Pulp Stone for the Manufacture of Groundwood Used in the Manufacture of Paper.** Fritz Ruhlemann. Ger. pat. 496,864 (July 12, 1928).—Thermo couples are imbedded in the inside of the pulp stone. The free ends of the wire are led to the outside of the stone where they are connected to the recording device, so that the temperature at various places within the stone can be watched for the purpose of guiding the pulp stone, and thus prevent stone breakages. The imbeddes thermo couples are also used during the manufacture of the stone for observing the setting temperature of the cement.—J.F.O.

**Process for the Manufacture of Pulp Stones of Cement for Groundwood Production, in which the Temperature of the Cementing Bodies can be Determined.** Fritz Ruhlemann. Ger. pat. 498477 (March 14, 1929).—The temperature of the surrounding region of the stone is measured together with the measuring of the temperature within the stone during its hardening and setting and these temperatures are compared.—J.F.O.

**Regulating Device for Pulp Grinders with Mechanically Loaded Process.** Firma J. M. Voith. Ger. pat. 494,050 (April 10, 1926).—A brake device is connected with a motor driving the feeding arrangement for the wood, whose brake action is regulated by a governor or electrical regulator influenced by the drive motor of the pulp stone. A jet turbine can be used as the braking device, which acts on the motion of the feed motor. A similar turbine can also be used for the motor driving the wood feeding arrangement.—J.F.O.

**Fastening a Pulp Stone to its Shaft.** Amme-Luther Werke, Braunschweig der Miag, Muhlenbau und Industrie A.G. Ger. pat. 498,502 (May 6, 1926).—There are no special elastic membranes between the parts being tightened, since these parts form an elastic membrane themselves, so that they take up the give, to a considerable degree, of the pressure acting parallel to the shaft.—J.F.O.

**Process and Device for the Regulating Several Mutually Driven Wood Pulp Grinders.** J. M. Voith. Ger. pat. 449,906 (Oct. 20, 1925).—Besides the regulators for the total power required, operating in the usual manner by means of a regulating device independent of the speed of rotation of the pulp stone, is a second regulator through which the power fed to each single grinder is regulated through a regulating device specially arranged on the grinder concerned.—J.F.O.

**Arrangement for Feeding Wood to a Continuously Operating Pulp Grinder.** J. M. Barstad. Nor. pat. 47,515 (July 1, 1926).—The grinder is provided with pinion gears on the two opposite sides of the magazine for the feeding of the wood. The feed mechanisms are placed on one or both sides of he magazine.—J.F.O.

**An Arrangement for Pulp Grinding Apparatus.** Trygve Kittelsen. Nor. pat. 47,577 (April 12, 1926).—Between two or more pulp grinders without magazines, a sili, suitably formed to receive the wood from above and deliver it to the grinder, is so placed that the wood is received without any special conveyor arrangement. The silo is of such a size that it can serve as a common supply chamber for the grinders while the wood preparing department is down for a considerable time.—J.F.O.

**Regulating Arrangement for the Feed of Wood Pulp Grinders Having Several Pulp Stones Driven by a Mutual Electric Motor.** Siemens-Schuckert-Werke, A. G. Aust. pat. 116,556 (May 15, 1928).—For automatic feed with uniform load and uniform division of the load, all feed, motors are arranged with constant total load in dependence of the total load of the main drive motor by means of a mutual auxiliary motor or a similar device. Also all feed motors or a part of same are so regulated that they are self arranged in direct dependence to their load and only indirectly dependent of the total load.—J.F.O.

**Conveying and Feeding Device for Wood to a Magazine Grinder.** Leif Soerle. Nor. pat. 47,641. The wood is led from a conveyor which feeds all the grinders by means of a device which regulates the wood going into each grinder.—J.F.O.

**Automatic Speed Regulator for Pulp Grinders for the Production of Groundwood Which Operates Under the Influence of the Speed of the Wood to the Stone and in an Electrical Manner.** Linke-Hofmann-Werke A. G. Abteilung Fullnerwerke. Aust. pat. 118,070 (July 15, 1929).—The speed of the wood fed to the grinder is influenced through an electric current produced in relation to the speed of the motor driving the stone and in such a way that any change in the speed of the drive acts oppositely through an immediate change in the load of the stone.—J.F.O.

**Device for Feeding Continuous Operating Wood Pulp Grinders.** Otto Herdey Petersdorf, Ger. pat. 499,301 (March 8, 1924).—The opposite parallel walls of the wood magazine for the wood in storage, are formed of revolving rolls placed parallel to the wood. The bearing for the revolving rolls are placed in a guide, only the bearings located near to the pulp stone are lubricated under pressure. The slide bearings are so made in reference to thir large form, that the roll in the closed guide must be held apart from each other at a determined distance. The device is thereby chainless. The drive device for the rolls are formed by means of a screw which takes hold in the clutch of the bearing of the roll.—J.F.O.

**Process and Device for the Grinding of Wood.** Andreas Biffar. Aust. pat. 118,812 (March 15, 1930).—In opposition to the

usual methods used at the present time, of the wood being pressed against the rotating stone; the wood is revolved and through its centrifugal force is pressed against the inner surface of a ring shaped stone which is itself stationary. A concentric disc with ribs on both sides is arranged on a shaft in the inside of the pulp stone. The outer edge of the ribs is cut obliquely so that the stock from the wood introduced on the one side of the disc is led to the other side of the disc and removed. The invention, which is worked out in two different models allows the grinding of the wood in two different forms, such as logs and saw mill slabs, and thus makes for the apparatus to operate in a continuous process.—J.F.O.

**Arrangement for the Regulation of the Pressure on Wood Grinding Machines with Electrical Feed Motors.** Siemens-Schuckert-Werke A. G. Nor. pat. 48,051 (July 27, 1927).—The regulator for the feed motor is acted upon by an arrangement dependent upon the speed of rotation of the feed motor.—J.F.O.

**Process for the Manufacture of Pulp Suitable for Special Purposes, by Mechanical or Chemical Means. A. St. Klein.** Nor. pat. 47,983 (Sept. 20, 1928).—The decomposition follows in the presence or absence of chemicals, in which the wood fibers become exploded from each other by sudden pressure changes in contact with steam or other gases present.—J.F.O.

**Apparatus for the Recovery of the Bast Fibers from Plants Having Stalks, by which the Stalk is Broken and Defibered by Means of a Special Cutter.** Max Einstein, Hamburg and Gustav Hollman, Ger. pat. 502,821 (April 21, 1926).—The apparatus used for the breaking and defibering of the stalks led to the point of action is at such a distance from the conveyor and the height of the hammer in so measured that the stalk is split in the middle.—J.F.O.

**Machine for the Crushing and Breaking of Stalks of Plants Containing Fibers, Which Consists of a Number of Pairs of Rolls Which Works the Stalks between the Rolls.** Ernest Leonhard Plaetinck and Edgard Georges Auquier. Ger. pat. 505,390 (May 16, 1929).—The first pair of rolls consists of marble while the second pair consists of one smooth roll and one having teeth. In the following rolls are grooves in one roll and teeth on the other and each consecutive pair is arranged closer to each other.—J.F.O.

**Device for the Feeding of a Continuous Acting Wood Pulp Grinder.** Emil Gmider. Ger. pat. 469, 119 (Nov. 16, 1927).—J.F.O.

**Machines for the Recovery by Mechanical Means of the Least Fibers from the Stalks of Ramie, Jute, Mallow, Etc.** Naamlooze Vennootschap Delta Maatschappij voor Commercieele en Industrieele Financiering. Aust. pat. 117,737 (Jan. 15, 1930).—The stalks fed into the machine are continually led over a device for breaking and smashing and in such manner that the device does not harm the bast fibers.—J.F.O.

**Chemical Pulp for Paper Making.** Frank A. Johnson assignor of one-fourth each to John H. O'Connell, John D. Haskell and Dilts Machine Works, Inc. U. S. pat. 1,786,538, (Dec. 30, 1930)—Chemical pulp is subjected to a grinding (as distinguished from beating) operation and the character of the grinding stones is varied to accord with the character of paper to be produced, and freeness tests are applied at the point of grinding and the pressure of the pulp against the grinders is varied and water is introduced to accord with the requirements of the particular pulp under treatment and the product desired.—A.P.-C.

### Miscellaneous Digestion Processes

**Machine for the Recovery of Fibers from Bast Plants, With Several Pairs of Rolls Arranged In Groups In Series.** Reuben Levi Pritchard. Ger. pat. 505,036 (Sept. 28, 1928).—After one or more groups of smooth or finely grooved pressure rolls acting together in pairs, the lower rolls having spring bearings, a number of deeply grooved rolls follow. These rolls operate in such manner that the ridges of the one roll fit into the grooves of the adjoining.—J.F.O

**Process for the Manufacture of Cellulose Materials, Especially from Plant Fibers, by Means of Soaking the Material in Solutions Which Contains Alkali and a Phenol.** Leon de Wolf, Lebbeke. Ger. pat. 502,265 (May 30, 1925).—A bath is used which contains besides the quantity of alkali required for the phenol, an excess of free caustic which quantity is large than that which is used to combine with the phenol and even a multiple of this quantity is advantageously used so that the bath contains also an oxydation means According to the claim number 2, a bath is used containing at least 5 per cent of water free caustic and 1 per cent pure phenol.—J.F.O.

**Process for the Manufacture of Cellulose Free from Lignin by Means of Hypochlorites of the Earth Alkalies.** I. G. Farbenindustrie A. G. Aust. pat. 119,491 (May 15, 1930).—The material containing the cellulose is treated with the required quantity of the chlorine substance containing at least 2 per cent for completely oxydizing the lignin Milk of lime is then gradually added, the temperature being held below 45 deg. C.—J.F.O.

**Process for Setting Free the Fibers from Materials Containing Cellulose such as Wood, Straw and Similar Substances.** I. G. Farbenindustrie. Fin. pat, 12,995 (April 26, 1928).—The fibers are drenched with dilute nitric acid in a warm or cold condition, at usual, higher or lower pressure, whereby the fiber at the desired temperature, becomes separated eventually by the use of vacuum.—J.F.O.

**Process for the Manufacture of Pulp from Wood Fibers.** Carl G. Schwalbe. Ger. pat. 496,197 (May 15, 1928).—The wood fiber is drenched with a solution of magnesium salts especially magnesium chloride and magnesium sulphate, or mixtures of both. After complete immersion and separation of the drenching liquid it is precipitated out by addition of earth alkalies or alkalies of magnesium as base. It is then heated with or without pressure for the purpose of dissolving the incrustants.—J.F.O.

**Decomposition of Straw with Nitric Acid.** H. Suida, H. Sadler and F. Noss. Papier-Fabr. 28, No. 21: 345 (May 25, 1930).—The results obtained by treating straw with various quantities of nitric acid are tabulated. It is shown that a yield of 50 per cent of bleachable straw is obtained with a consumption of only 10 per cent nitric acid. The copper number ranges around one with yields of alpha cellulose of from 86 to 93 per cent depending on the quantity of nitric acid used. The bleach consumption varies with the quantity of nitric acid used and the time of cooking.—J.F.O.

**Straw Decomposition with Magnesium Chloride and Other Salts.** N. Orlow, W. Osmulsij and M. Rjesch. Zellstoff Papier. 10, No. 5: 328 (May, 1930).—Two possible processes are described. The one is, cooking without chemicals in rotating digesters at 4 kilograms pressure for a period of 5 to 7 hours with the addition of small quantities of chalk to neutralize the acid formed during cooking. The other process is to cook with 6 to 7 per cent sodium chloride or other suitable salts at 4 kilograms pressure for a period of 1¼ to 1¾ hrs. The gas is then relieved and 3 to 3½ per cent sodium hydroxide is added and the cooking is continued for 1½ hrs. more at 4 kilograms pressure. The results and data are given.—J.F.O.

**Process for the Decomposition of Materials Containing Cellulose such as Wood Straw and Similar Materials.** I. G. Farbenindustrie A. G. Aust. pat. 118,237 (Feb. 15, 1930).—The moistened material is treated with air containing nitric acid. The concentration of nitric acid vapors can deviate within a wide range. The same results can be obtained by treating with a dilute nitric acid and a following treatment with air.—J.F.O.

**Jordan Engine.** Edward A. Jones assignor to E. D. Jones & Co. U. S. pat. 1,774,556 (Sept. 2, 1930). In a preconstructed lining for jordan engine shells the means provided for securing the bars and spacers together are firmly attached to an anchor member so as to form a solid unit ready for insertion into the shell.—A.P.-C.

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# Are the Federal Anti-Trust Laws An Obstacle?

## If So Should They Be Amended, Or Does the Remedy Lie in the Field of Administration?*

By Goldwaithe H. Dorr[1]

We have been considering here today the practicability of measures for mitigating the concededly wasteful and disastrous effects of excess capacity and overproduction in our natural resource industries.

Industries, and particularly natural resource industries, where production and demand are radically out of balance, are constantly exhorted by publicists to "stabilize themselves," to "put their house in order." They are frequently admonished that if they do not the Government must step in and do it for them. Indeed industry generally is now being accused of a lack of intelligent planning and action in letting itself slip into its present disastrous situation and in failing to pull itself out. Intelligent planning to avoid such a plight and measures to escape from it obviously require concerted action for stabilization. Industry might very well reply: how can it be expected to plan intelligently and to take concerted action to stabilize itself by restoring or preserving the normal balance of supply and demand when its right to take any such concerted action is questioned under the Sherman Law. And industry is further faced with the fact that the method selected for resolving that question may be an indictment for crime, with its inevitable opprobrium, no matter what the ultimate decision of the Courts.

### Causes Deep and Varied

The causes of our present discomfiture lie so deep and are so varied, and of such worldwide operation, that it would be idle to believe that any amount of practicable planning by industry or the fullest freedom of concerted action to prevent it could have wholly averted it, or can immediately extricate us from it. Such action might, however, very well mitigate certain aspects of the disaster. Is such concerted action, the aim and effect of which is to restore a reasonable balance between supply and demand and resulting normal competitive conditions, properly to be questioned under the Sherman Law? Is it not often assumed too lightly from certain general language in judicial opinions that the Sherman Law stands in the way of any concerted action whatever intended to affect production, no matter how reasonable and in the public interest?

It is, of course, clear that the Sherman Law forbids concerted action to produce an arbitrary limitation of production which would throw supply and demand *out* of balance, produce a shortage and so create an abnormal price structure. But this is a very different thing from saying that in such a situation as it is now confronted with industry cannot by concerted action endeavor to put supply and demand *back into* balance and so restore a normal competitive situation—that it cannot, without committing crime, mitigate by concerted action the destructive effects of a radical departure from such a balance by preventing, for example, the further pyramiding of excess stocks.

Where productive capacity and demand are reasonably in balance then the normal play of competition protects the public, producers and consumers alike, by preserving a range of prices which are governed by and bear a reasonable relation to cost of production. Roughly, competition in private industries plays the same role in securing to producers and consumers alike a reasonable price that regulation by the Government does in public service businesses. There is competition among buyers in buying, and competition among sellers in selling; and with production and consumption in reasonable balance a normal competitive price range is the resultant of that dual competition. But where production and consumption are thrown out of balance, whether by shortage or surplus, then for the time being the workings of competition cease to be protective. For practical purposes one side or the other of the normal competitive process is wiped out.

In case of an acute shortage the normal workings of competition among sellers substantially ceases and the competition among the buyers carries prices to destructive heights. On the other hand, with excess stocks and excess capacity, the normal competition among buyers, which in ordinary conditions is one of the factors producing a balanced competitive price, is for practical purposes suspended. The result is that when an industry is thrown out of a normal balance of production and consumption the normal play of this dual competition is disturbed and it no longer furnishes protection against prices wholly unreasonable and destructive.

There was at one time a school of thought which failed to recognize that the public was vitally affected by an artificially low price due to supply beyond what demand will absorb, as well as by an artificially high price due to shortage in supply. That the phrase "detriment to the public" in such a connection includes producers just as much as consumers was well brought out by an opinion of the Privy



* Address given before Natural Resources Production Department, U. S. Chamber of Commerce, Atlantic City, N. J., April 29, 1931.

[1] Attorney, New York City.

Council in a case arising under the Australian trade restraint statute.

**All Producers as Well as Consumers**

As a practical matter almost every one of us is, either as farmer, industrial worker, or through ownership as stockholder in an industrial enterprise, to some extent a producer as well as a consumer. Even that small class of consumers who cannot in any sense be said to be producers, have no legitimate interest in securing their bread or their clothes, their shelter or their luxuries, at anything below the normal range of competitive prices. When, as a result of abnormal conditions, they are able to secure products below cost, they are to that extent securing something for nothing, and it is no part of sound economics or a sound social structure that any part of the public should so secure something for nothing.

It might at one time have been urged that the operation of ordinary economic processes could be relied on entirely for adjustments of production and consumption. It is true that the fundamental economic processes tend to work out the problem over a sufficient period of time. But it is equally true that they do not work with the smoothness and promptitude pictured by the old *laissez faire* economists. Instead such processes are often interminable. This is not the economically frictionless universe of the Economic Man. There is in the actual working out of economic adjustments, made inevitable by such causes as the opening of permanently lower cost sources of supply, or the lessening of demand due to the substitution of other products, a degree of wastage and accumulation of industrial wreckage which it is only common sense to mitigate so far as possible by planned and concerted action in making the adjustments. Further there are violent fluctuations due to wholly temporary causes, the destructive effect of which can only be mitigated, if they are to be ameliorated at all, by temporary concerted action for their adjustment. And this seems now the conception of all except "closet economists."

**Creating Shortage Is Vicious**

A concerted effort by producers to destroy the balance of supply and demand by creating a shortage of supply is vicious because it destroys the normal quality of competition among buyers and among sellers and the resulting protection against unreasonable balance of supply and demand has just the opposite effect. Its inherent tendency is to restore the normal quality and equality of competition among the buyers and among sellers, lost when the industry went out of balance, and to restore the resulting protection against unreasonable and destructive prices.

The one effort is obviously depriving the public of the protection of the normal workings of competition, the other is directly in the line of restoring such protection. And when I say public I include producers and consumers alike. Curiously enough it is sometimes forgotten or ignored that the Sherman Law is applicable to the protection of producers as well as consumers.

There has already been some recognition by the Supreme Court that the stabilization of an industry—that is, the maintenance of the normal balance between production and consumption,—is in the public interest. In deciding that it is lawful for an industry to take concerted action in gathering, disseminating and discussing the facts of the industry as to production and demand, the Court held that the fact that such concerted action tends to diminish abnormal fluctuations in price, due to shortage or excesses, does not render it objectionable.

Under normal conditions of balance between production and consumption, the concerted gathering of trade information, and discussion of its significance, the intelligent individual use of such information, and the leadership of those units best in a position to gauge the market, may suffice to maintain the reasonably balanced state of normal competition and the resulting stabilization which is in the public interest. But in too frequent abnormal situations of temporary or chronic dislocation of supply and demand this is not the situation. This fact should be frankly recognized, not blinked. Those who are in natural resource industries are acutely conscious of the fact that abnormal situations arise in industries and sometimes become chronic where productive capacity and demand are so wholly out of balance that the restoration of normal competitive conditions,—and normal balance between buyer and seller,—can only be effected, if at all, by further concerted action.

**An Extreme Example**

To take an extreme example, consider a group of crude oil producers whose wells tap the same pool. It may be obvious that under the prevailing conditions of overproduction in the oil industry it is unintelligent to produce from these wells at anything like capacity, and still more wasteful and unintelligent to sink additional wells; and yet it is equally obvious that it requires concerted action by all having access to that pool to deal with the situation. No one operator or group of operators will stand by and see the resource to which all in common have access exhausted by other operators who are continuing to produce. Situations on a wider scale, in which the difficulties of solution by mere individual action are for practical purposes almost as great, are familiar in natural resource industries and industry in general.

In such situations where the dislocation between production and consumption is operating destructively, and where as a practical matter only concerted effort can restore normal conditions of competition, why should not direct effort, by intelligent planning and concerted action as to production, be permissible, when the indirect effort to accomplish the same object by the concerted gathering and dissemination of trade information and discussion of its significance, is admittedly lawful?

Temporary measures, applicable to the emergency, to keep stocks which the demand is not absorbing, from further pyramiding, do not lessen trade, but merely mitigate the destructive effects of abnormal conditions and tend to restore the normal workings of competition with production and consumption in reasonable balance.

**Never Squarely Presented to Court**

There seems to be no case in which the Supreme Court has had this issue squarely presented to it for decision.

The Supreme Court has indicated in the *Standard Oil* and the *American Tobacco* cases that the effect of the Sherman Law is to make applicable to interstate commerce the Common Law prohibitions against restraint of trade. It never seems to have been the rule at Common Law that such efforts to mitigate the destructive effects of what the Supreme Court has described as the "business crises resulting from overproduction" by restoring or preserving a reasonable balance between production and consumption were in the eye of the law "restraint of trade." For industry to urge that the Sherman Law be interpreted and administered in a way that does not interfere with such restorative efforts made in good faith is not to ask for exemption from the Sherman Law on the ground of the difficulties of the present economic situation; is not to ask that that law be weakened or that its violation be winked at. It is merely to ask that the realities of the competitive process be looked in the face and given effect in the drawing of legal conclusions.

Why should not industry, for example, ask that the fact be recognized and given legal effect that there is a complete

antithesis between destroying the normal workings of competition by creating a shortage, through limitation of production, and the restoring of the normal healthy workings of competition by steps to prevent an unused excess from further piling up. Would it not be failing to look at realities to regard reasonable concerted efforts to restore the normal balance between supply and demand as evidence of original sin in industry; to regard the admittedly destructive effects of overproduction as predestined evils which it would be almost sacrilegious, and certainly illegal, to attempt to so avoid or mitigate?

Industry, as it seems to me, is no more asking for exemption from the Sherman Law than it was nine years ago when, in the last period of serious depression, it was protesting against the position that the concerted gathering by competitors of the facts of their business and discussion of the significance of those facts were *per se* indicia of illegality warranting indictment and suit in equity. It was then being claimed that that position was compelled by dicta and even decision of the Supreme Court and that the whole valuable informational system of trade associations must consequently be thrown into the discard. But the Supreme Court, when a case came before it presenting this issue in a clear-cut way, found that there was nothing in the Sherman Law which compelled a result so contrary to the public interest.

### A Graphic Illustration

An incident in the coal industry in 1922 illustrates graphically the effect of the dislocation of the normal balance between production and demand. With the closing down of a considerable part of the production of the country, due to the bituminous strike, the limits to which the available supply would go and the hardship on the consumer if the situation had been allowed to take its course, were appalling. It could only be handled by concerted action as to price. If one man were charging any price that these abnormal conditions would bring, his neighbor would naturally do the same. There was concerted action by those who had coal to sell, to mitigate the effects of this disturbance in normal competitive conditions by keeping price within reason. As a result of concerted action on the part of the sellers under the encouragement and leadership of the Government, the destructive effects of the shortage were enormously mitigated, and, as was stated by the then Secretary of Commerce, millions of dollars were saved to the consumers. Here was concerted action on the part of producers to check the wild and destructive course that the departure from the normal balance of competition was creating. Only concerted action could check it. I do not believe it was winked at a violation of the Sherman Law not to prosecute this concerted action even though it dealt directly with price and though the Courts have of course gone very far in broad statements as to the illegality of price fixing. If a Court had been called upon to pass upon this action, it is difficult to believe that it would have found this combination to mitigate the disastrous effects of a departure from normal competitive conditions a combination in restraint of trade.

It may be argued, with some support from judicial language, that it is administratively impracticable to distinguish between arbitrary limitations of production to create a shortage, and limitations on excess production which merely tend to put the industry back into balance. In comparison with other questions of fact which Courts decide every day, why should there be any insuperable difficulty in making the broad distinction? There would be borderline cases here, as in every branch of the work of the Courts. As a matter of fact, experience indicates that it is only under the severe stress of production thrown out of balance that any concerted action as to production can be obtained; and there are many economic factors which make any such action self-terminating, only anything like balance between production and consumption is restored. Of course any such concerted action extending over an arbitrary period, and effective beyond the accomplishment of its legitimate ends, is on its face improper. In the countries outside of the United States whose legal systems in this matter are based on the Common Law—Canada, England, Australia, New Zealand, India, South Africa—it is recognized that agreements which do nothing more than seek to restore or maintain balance between supply and demand, and so produce that reasonable price which is the result of a normally balanced competitive situation, are not in restraint of trade. Experience has indicated that this broad rule in these countries, with economic and social conditions closely approximating our own, has worked satisfactorily. The rule has not been the mother of oppression or presented serious administrative difficulties in execution.

A case has yet to be presented to the Supreme Court, stripped of all adventitious circumstances, where the sole issue is whether or not an effort, in good faith, by an industry as a whole or a substantial part of it, to restore a fair balance of supply and demand, and so permit the normal workings of competition among both buyers and sellers, is to be regarded in the same category of illegality as an effort to destroy that balance for illegitimate gain. The history of the way in which the Supreme Court has worked out specific problems under the Sherman Law seems to warrant industry in looking with confidence to the Court applying a rule in such a case, when it arises, in accord with the common sense of the situation, with the broad principles laid down by it in the *Standard Oil* and *American Tobacco* cases, and with what has been found workable and satisfactory in actual experience in countries with conditions similar to our own.

### Conflicting Views

On an issue of this sort, however, no matter what confidence we may have that a rule of law, so consonant with the interests of the public, will ultimately be applied, it is inevitable that there should be conflicting views. There is much in the language of the opinions which inevitably makes industry hesitant in dealing effectively with the problem of restoring normal competitive conditions in an industry dislocated, temporarily or chronically, by excess capacity and overproduction. Possibility of indictment and long drawn out litigation is a constant deterrent, no matter how confidently it is believed that after five or six years in the Courts a prosecution would ultimately be dismissed as unfounded. In view of the uncertainty which undoubtedly exists in the public mind as to certain important aspects of its application, it is being urged by some that Congress should adopt certain declaratory definitions. If that course were pursued there might well be included among such declaratory definitions one to the effect that concerted action by producers, the purpose and effect of which will be to preserve or restore normally balanced competitive conditions by reasonable adjustment of production to demand shall not be deemed a restraint of trade.

But the adoption of such a definition would not wholly meet the situation. It would still be realized that an Attorney General might differ from the industry as to what measures are reasonably necessary and adapted for the restoration of normal competitive conditions. The paralyzing effect of this uncertainty upon the direct and decisive action which an emergency situation might demand is not avoided no matter how confidently it is believed that the Court, after protracted litigation, will ultimately decide that the industry was right and the Attorney General mistaken.

In the serious situation in which we now find ourselves

it is widely felt that there would be a decided advantage in submitting proposed plans for relieving an industry from abnormal situations and keeping it from falling into them, to an administrative board or officer, well informed in the practical aspects of the economic situation, with a right to approve the operation of such plan. Various suggestions along these lines have been made from time to time in the past, usually, as now, in times of depression, when the problem of getting back to normal competitive conditions and away from the destructive abnormal effects of overproduction have been felt most acutely.

In 1908, after the depression of 1907, President Roosevelt suggested committing to the Commissioner of Corporations wide powers of this nature. In 1914, at the time of the Federal Trade Commission Act, it was suggested that powers of this sort be given to the Federal Trade Commission. In 1922, as a result of the lessons of the depression of 1921, the Edge Bill was introduced in Congress giving broad powers to the Federal Trade Commission with regard to Trade Association activities. And now, in the general dislocation of industry, suggestions of the same general tenor are being made from all sides.

No general law along the lines of these suggestions has ever been passed. Congress from time to time has, however, provided for placing the consideration of agreements in a particular industry in the hands of an administrative body particularly familiar with the conditions and needs of that industry. By the provisions of the Transportation Act, the legality of pooling agreements, mergers and consolidations among rail carriers cannot be questioned under the anti-trust laws if submitted to and approved by the Interstate Commerce Commission. Again, by the Shipping Board Act, the legality of a wide range of agreements among carriers by water, where the effects of the lack of reasonable balance of supply and demand are particularly destructive, cannot be questioned if filed with and approved by the Shipping Board. Again, the Capper Act provides in practical effect for administrative supervision by the Department of Agriculture of various cooperative agreements and transactions among the producers of food supplies. Whether or not such agreements unduly enhance price, which was the Common Law Rule, is made the sensible test of their legality.

On the whole I believe it can be said that these experiments in permitting the advance submission of agreements in certain industries to administrative bodies familiar with the needs of those industries, rather than leaving them to be tested out after the fact by the slow procedure of the Courts, has worked to the general satisfaction.

It might well be an experiment worth trying to provide that agreements among producers in the natural resource industries dealing with production and aimed to restore or preserve a normal balance between supply and demand in those industries might be submitted to some body whose duties brought it into intelligent and intimate contact with the workings of natural resource industries—a board such as the Federal Oil Conservation Board or a board of experts, set up, say, in the Bureau of Mines. Such a statute might well provide, as in the case of the Transportation Act and Shipping Act, that if these agreements were approved their legality should not be questioned.

I believe it would be greatly to the advantage of such a board that its members, in the course of their other departmental duties, be brought in intimate contact with the workings of the industries so that when such agreements came before them for examination they could bring to them a long acquaintance and first-hand knowledge of conditions in the industries affected which would enable them to review such agreements in their proper setting, see them in their proper proportions, and bring to their consideration an informed judgment as to their necessity, workings and prospective effects. It is only from such an administrative agency so informed that the essential promptness in determination could be hoped for.

It would be an experiment. Specialized bodies sometimes work out satisfactorily, sometimes are thrown into the discard, as was the experiment of the Commerce Court.

To sum up: As I see it, the anti-trust laws are practical obstacles to intelligent planning and concerted effort in dealing with the problems of overproduction in the natural resource industries, not so much because such plans, if carried out and tested in the Courts would be found to be offensive to the Act, as because of the uncertainty as to the results, the essential unsuitability of indictment or equity suit as a method of testing such matters out, and the natural hesitancy of business men to embark on such efforts in the uncertainty that exists.

Decisions of the Supreme Court, in cases which fairly present these issues, may ultimately help the situation. Declaratory definition by Congress might be useful. Submission of such agreements to an administrative body whose business it is to keep itself informed of the economic and technical conditions in an industry is an experiment which has so far succeeded reasonably well in certain other branches of industry and would seem to be worth trying in the natural resource industries.

The removal of the present uncertainty by clarification of the anti-trust laws and changes in the method of its administration as applied to natural resource industries are obviously not panaceas for the difficulties which these industries experience. Though voluntary concerted action in these industry to meet the problems of overproduction in any reasonable way that the industry could agree on were in every way facilitated by governmental action, there is still the problem of getting an industry, or any part of it, into agreement. There are diversities of interest among producers difficult, if not impossible, to reconcile, even in the face of a common emergency. There are always some in an industry who will seek to take advantage of the intelligent adjustment of production to the demand by the majority to push their own production to the full. In fact, in certain industries such difficulties in securing voluntary concerted action to an extent necessary to eliminate waste or adjust production to demand have been experienced, that Governments have taken affirmative measures to assist or compel it, such as the Natural Gas Law in California and the National Coal Act in England.

Certainly, however, the possibilities of voluntary action should be exhausted before involuntary cooperation should be compelled. While such concerted action among producers looking to a reasonable adjustment of production to demand can at best prove but a mitigation for the difficulties which these industries experience, that is no reason why the various proposals for facilitating such action should not be tried out and lessons from experience with them made available for further progress. There is every reason why the situation should be clarified and industry should be relieved from any impression that it is necessary to bootleg sound economics.

It would be a misfortune, however, if, while awaiting the slow process of further clarification by legislation or judicial decision, all concerted steps toward the reasonable adjustment of production to demand were to be abandoned. The destructive effects on confidence of the present dislocation of supply and demand are patent. They are links in a chain of causation tending to bring about further underconsumption. In the public interest it is to be hoped that industry will in this emergency have the courage and confidence to take such steps as it effectively can toward stabilization.

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WOOD FLOUR

B. L. Soberski, Stavangerfjord, Frederickstad, 24 bags.
The Burnet Co., Statendam Rotterdam, 400 bags.

## PHILADELPHIA IMPORTS

WEEK ENDING MAY 23, 1931

Liberty Nat'l. Bank & Trust Co., Exarch, Marseilles, 210 bls. rags.
E. J. Keller Co., Inc., Etsrella, ——, 68 bls. rags.
E. J. Keller Co., Inc., Koln, ——, 42 bls. rags.

## SAVANNAH IMPORTS

WEEK ENDING MAY 23, 1931

E. J. Keller Co., Inc., Estrella, ——, 68 bls. bls. bagging.

## BOSTON IMPORTS

WEEK ENDING MAY 23, 1931

G. F. Malcolm & Co., Baltic, Liverpool, 56 cs. tissue paper.
International Counter Co., Exarch, Genoa, 100 bls card board.

Cotton and Paper Rolls
Super Calenders
Friction Calenders
Embossing Calenders
Hydraulic Presses and Pumps

*Successors to the Granger Foundry & Machine Co.*

**The Textile-Finishing Machinery Company**
**PROVIDENCE, R. I.**

# Sulphur

A FIRST REQUISITE

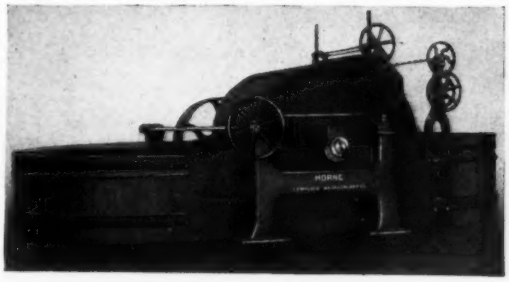
in

*Paper Making*

Large Production
Ample Reserves
Prompt Deliveries
Purity 99½%

**TEXAS GULF SULPHUR Co**
(Incorporated)
75 East 45th Street, New York City
Mine: Gulf, Matagorda County, Texas

## Horne Beaters are Modern

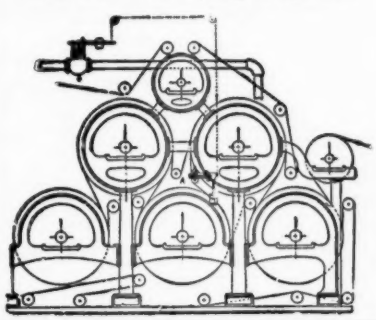


The moderate initial investment immediately yields heavy returns in quantity and quality.

**J. H. HORNE & SONS CO.**
Established 1864
LAWRENCE, MASS., U. S. A.

Beater Bed Plates—Beater Fly Bars—Beater Rolls—Beating Engines—Brushing Engines—Cylinder Paper and Board Machines—Conservators (Pope)—Dryers — Fourdrinier Paper Machines — Jordan Engines — Jordan Fillings (Regular Steel, Bronze, Stainless Steel and Iron)—Paper and Board Cutters—Cutter Knives—Press Rolls (Rubber Covered, Granite, Iron, Wood)—Screens—Suction Boxes and Covers—Vats (for Paper Machines)—Washing Engines—Wet Machines

The Pickles Drying Regulator



**WE ARE SAFE IN OUR PROPOSITION**
**YOU'LL MAKE NO MISTAKE IN ACCEPTING IT**

# Pickles Drying Regulator

will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

**W. F. PICKLES** **Buckland, Conn.**

## The Problem of Bearing Lubrication

The proper lubrication of bearings on beating engines is a subject of continual interest and argument in paper mills. In view of this fact, the following entitled "The Problem of Bearing Lubrication," by Allan E. Brewer of the Texas Company, printed in "Lubrication," the magazine of the Texas Company, is timely and is reprinted herewith:

"The actual weight of the beater roll is the basis of the prevailing lubrication problem involved in beater operation by virtue of the pressures developed on the bearing surfaces. Except in more recent designs provided with some sort of shock absorbing device, beater bearings will still be found to carry plain bottom half bearings only, in order to accomodate the lifting action caused by masses of pulp passing between the roll and the bedplate.

"The beater bearing, whatever its type, is difficult to lubricate properly due to the pressure resulting from possible alternate lifting and dropping of the journal. When this takes place water and pulp will tend to get into the bearing.

"The use of suitable shock absorbers, however, and automatic means of lubrication such as the wick oiler, will obviate the above to a large extent and minimize the detrimental results which would otherwise occur. When such construction prevails, careful attention must be given to the choice of the lubricant. Experience has proven that a medium viscosity straight mineral oil will meet the requirements if bearings are properly aligned and no excessive clearance prevails. Should wear have occurred, however, to increase this clearance it will be well to consider increasing viscosity. Sometimes a light steam cylinder oil will serve the purpose, although if wear has developed to any marked degree it is not always safe to rely on viscosity alone to protect the bearings. Readjustments would be the more logical procedure.

"Beater and washer bearings on the other hand, cannot always be oil lubricated. On some types when open half bearings are involved or where the taps are provided with recesses or pockets for pad lubrication, grease will frequently be preferred. In such instances a comparatively high melting point product should be used which will not only develop a lubricating film of sufficient pressure resisting ability, but also withstand any washing out effect of water."

## Algonquin Paper Co. on Full Time

[FROM OUR REGULAR CORRESPONDENT]

OGDENSBURG, N. Y., May 25, 1931.—Full time operations are again being observed in the sulphite plant of the Algonquin Paper Company resulting from the securing of new orders. The mill has been running at about fifty per cent of capacity for some time past because of competition resulting from importations of foreign sulphite and the return to normal operations was brought out following receipt of a large order from the International Paper Company. The sulphite departments of the latter concern at Corinth were destroyed in a recent fire and the local concern is now furnishing the product. Officials of the Algonquin Company had been negotiating for the contract for some time. The plant employs about 55 hands when on full time basis.

R. H. Laftman, formerly vice-president of the Bogalusa Paper Company, is visiting in Europe and may be reached at Amal, Sweden.

F. W. O'Rouke has left the Eaton Paper Company, Adams, Mass., and has joined the sales organization of the General Dyestuffs Corporation in New York.

## Packaging Exposition Highly Successful

Under the auspices of the American Management Association, the first Packaging Conference, Clinic and Exposition was held at the Hotel Pennsylvania, New York, on May 19, 20 and 21. The event attracted an excellent attendance of business men interested in the packaging industry and this gathering has proved highly successful in every way.

The Exposition reflected current accomplishments with respect to packaging materials, mechanical packaging methods, packages, outer packaging, etc., that demonstrated to buyers and users of packages and each section of the packaging field, the whole scope and significance of current packaging endeavor.

Interesting and instructive displays were specially prepared for the Exposition by the following companies: Benjamin C. Betner Company, Better Packages, Inc., Brown & Bailey Company, The Container Company, Container Corporation of America, Container Machinery Corporation, DuPont Cellophane Company, Inc., Einson-Freeman Company, Inc., Robert Gair Company, The Gerrard Company, Inc., Hess & Densen, Hy-Sil Manufacturing Company, International Printing Ink Corporation, Interstate Folding Box Company, Kalamazoo Vegetable Parchment Company, Lower Paper Company, National Folding Box Company, National Metal Edge Box Company, New Jersey Machine Corporation, Package Design Corporation, Package Machinery Company, Thomas M. Royal & Co., Sealright Company, Inc., Shoup-Owens, Inc., Stokes & Smith Company, Sylvania Industrial Corporation, Trenton Folding Box Company and Union Bag and Paper Corporation.

## Oregon Pulp & Paper Co. Reports

PORTLAND, Ore., May 23, 1931.—The Oregon Pulp and Paper company which is controlled by the Columbia River Pulp and Paper company of which Frederick W. Leadbetter is president, reports a profit of $100,523 for 1930 after all charges for federal taxes. The former plant is located at Salem, Oregon, and the latter at Vancouver, Wash.

This compares with $233,493 in 1929 and $151,906 in 1928 after the same charges and before federal taxes. The balance sheet as of December 31, 1930, shows total assets of $5,130,757 against $5,127,241 at the end of 1929 and $5,042,444 at the end of 1928. Current assets amounted to $1,002,624 at the end of 1930 and current liabilities $616,176. The funded debt has been reduced to $1,150,000 from $1,215,000 which was the amount at the beginning of the year.

## Corinth Mill Betters Safety Record

[FROM OUR REGULAR CORRESPONDENT]

CORINTH, N. Y., May 25, 1931.—The local plant of the International Paper Company now ranks sixth in the annual safety contest of the National Safety Council in which all of the leading paper and pulp mills in this country and Canada are participating. The concern has moved into the first division which is composed of mills employing more than 750 persons. D. P. Healey, safety supervisor, announced that a decided improvement had been noticed in accident prevention during the past several weeks and there is a possibility of the local plant being among the prize winners. In the contest last year the mill here finished sixteenth and there is every indication that this rating will be improved. The campaign will be concluded during the early part of July.

# QUALITY PULPS

"HAFSLUND BEAR"
Bleached Sulphite

"FORSHAGA"
Bleached Sulphite

"HURUM SPECIAL"
Extra Strong Kraft

"BAMBLE"
Extra Strong Kraft

*Fresh Monthly Shipments—No Closed Winter Season*

**The Borregaard Company**
Incorporated
200 FIFTH AVENUE NEW YORK, N. Y.

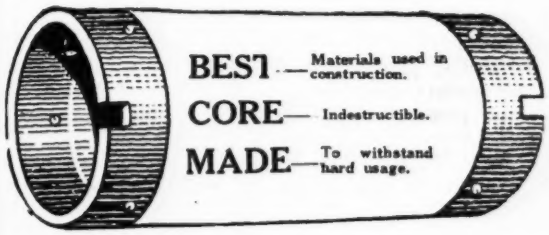
## SHIPPING INSURANCE

The Use of

# ELIXMAN CORES

protects your rolls and insures their delivery to your customer in perfect condition. They eliminate claims for damages.

## SHIPPING INSURANCE




*Your two sources of supply are*

**Canadian Elixman Company**
HAMILTON, ONTARIO

**Elixman Paper Core Company**
CORINTH, N. Y.

WOOD PULP
AGENTS

## PRICE & PIERCE, Ltd.,

60 EAST 42nd ST.

NEW YORK

# West Virginia Pulp and Paper Company

*Manufacturers of*

**SUPERCALENDERED**
**and**
**MACHINE FINISHED BOOK and LITHOGRAPHIC PAPERS**

Offset, Envelope, Bond, Writing Cover and Music Paper, High Grade Coated Book, Index Bristol, Post Card, Kraft and Label Papers

*also*

**Bleached Spruce Sulphite and Soda Kraft Pulp**

230 Park Ave. New York
35 East Wacker Drive Chicago
503 Market St., San Francisco, Cal.
Sixth and Chestnut Sts., Philadelphia, Pa.

## New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, May 27, 1931.

Conditions in the local paper market are fairly satisfactory. Demand for the various standard grades of paper was moderately active during the past week. Sales forces of the leading paper organizations are still working hard to secure orders and are mildly optimistic over the future. Prices are generally holding to formerly quoted levels.

Efforts are still being made to stabilize the news print industry. The price situation, however, continues unsatisfactory. Production of news print paper in the United States and Canada is being maintained in sufficient volume to take care of current requirements. Shipments against contract are going forward in fair volume, taking everything into consideration.

Trading in the paper board market is fairly active. The box board manufacturers are generally keying their output to consumption. Prices remain unchanged. Demand for the various grades of fine paper is seasonal. Tissues are moving at a normal pace for the time of year. The coarse paper market is irregular, although kraft wrapping paper is in improved request.

### Mechanical Pulp

The ground wood market is rather quiet at present. Demand for both domestic and imported mechanical pulp has fallen off slightly and quotations are easier. No. 1 domestic is now being offered at from $25 to $30 per ton, f. o. b. mill; while No. 1 imported is selling at from $27 to $30 per ton, on dock, Atlantic ports.

### Chemical Pulp

Steadiness prevails in the chemical pulp market and the continuation of the Norwegian pulp mill workers strike has had little or no effect on the situation. Demand for both imported and domestic grades is fairly satisfactory for the season and supplies are moving into consumption at a normal pace. Prices remain unchanged, in most instances.

### Old Rope and Bagging

The old rope market continues dull. Little interest is being displayed by the paper mills at present in either domestic or foreign old manila rope. Small mixed rope is also quiet. Prices are unchanged. The bagging market is moderately active. Scrap bagging and gunny bagging is reported as being fairly steady and roofing bagging is in seasonal request.

### Rags

With the exception of the roofing grades, the domestic rag market continues spotty. New cotton rags are only in light demand. Mixed rags, however, are moving in fair volume. The imported rag market continues dull. Dark cottons are now quoted at from .75 to .80, old shopperies at from .70 to .75 ,and new shopperies are quoted at from from .70 to .75.

### Waste Paper

Some improvement was noticed in the demand for the lower grades of paper stock. The board mills are exhibiting special interest in No. 1 mixed paper, offerings of which are limited, and consequently prices are firmer. Old kraft machine compressed bales are also arousing more interest. The better grades of waste paper are somewhat easier.

### Twine

Most of the business transacted in the local twine market was along routine lines. Supplies are going forward in normal volume for the season. There are a fair number of inquiries around for future needs, and the outlook is considered encouraging. No radical price changes have been reported of late.

## I. P. Co. Reports for First Quarter

The International Paper and Power Company reports net revenue including other income, for the first quarter of this year, of $10,801,786, compared with $10,454,495 last year. Since the close of the quarter, a number of manufacturers have announced a reduction in the price of news print retroactive to January first. The Company's adjustments in this connection, which it is estimated will not exceed $900,000, are not yet completed and are not reflected in the accompanying figures for the first quarter of 1931 which show net income before dividends on preferred stock of $1,400,115, compared with $670,054 last year.

Comparative figures are as follows:

| | First three months | |
|---|---|---|
| | 1931 See Note | 1930 |
| Net revenue, inc. other income | $10,801,786 | $10,454,495 |
| Less: | | |
| Depreciation | 1,877,096 | 2,437,355 |
| Int. and disc. on funded debt, income taxes, and minority interest in subs. | 5,346,844 | 5,323,762 |
| Balance for dividends | 3,577,845 | 2,693,377 |
| Divs. on stocks of subsidiaries | 2,177,729 | 2,023,322 |
| Balance for I. P. & P. Co. dividends | 1,400,115 | 670,054 |
| Dividends on I. P. & P. Co. stock: | | |
| Preferred stock | 1,632,565 | 1,623,692 |
| Class A common stock | ..... | 598,509 |
| Total dividends | 1,632,565 | 2,222,201 |

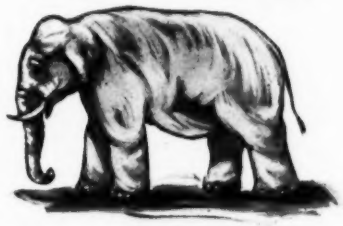
NOTE:—Earnings as stated for the quarter ending March 31, 1931 do not reflect any deduction or adjustment in respect of the news print price reduction retroactive to January 1, 1931, announced by certain other manufacturers. It is estimated that the amount involved will not exceed $900,000.

In his comments to shareholders, Archibald R. Graustein, President of the company, says:

"Prices generally are weak and volume low. On the other hand, reduction of operating costs is ahead of schedule. The New England Power Association earnings for the first quarter ran heavily below the earnings of a year ago, due in large part to extraordinarily poor water conditions, but current earnings are substantially improved.

"Preliminary figures for April for the company as a whole indicate earnings available for dividends of about $400,000 after allowing for the effect of the price reduction in news print."

## Are you using white elephants to beat your pulp?



* "With the compliments of the king." A gift of a Sacred White Elephant, never to be destroyed, always to be fed. Thus his majesty paid his grudge.

Are there any white elephants among your pre-war Beaters?

**J. H. HORNE & SONS CO.**

**Established 1864**

**LAWRENCE, MASS., U. S. A.**

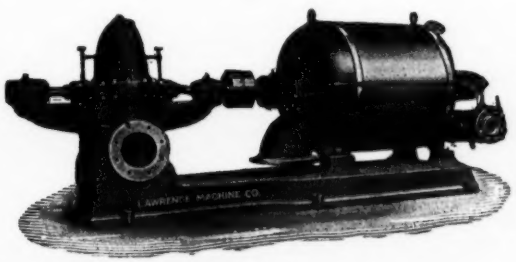
Beater Bed Plates—Beater Fly Bars—Beater Rolls—Beating Engines—Brushing Engines—Cylinder Paper and Board Machines—Conservators (Pope)—Dryers — Fourdrinier Paper Machines — Jordan Engines — Jordan Fillings (Regular Steel, Bronze, Stainless Steel and Iron)—Paper and Board Cutters —Cutter Knives—Press Rolls (Rubber Covered, Granite, Iron, Wood)—Screens—Suction Boxes and Covers—Vats (for Paper Machines)—Washing Engines—Wet Machines

**Horizontally Split Casing Double Suction Pumps**

## LAWRENCE PUMPS

The name protects and guarantees you satisfaction.

We are the original designers and builders of the LAWRENCE PUMP.



Lawrence pumps for all conditions and services. Forty-four years of practical experience with centrifugal pump development places us among the leaders. Our efforts have been rewarded by the acceptance of our product in general.

Thousands of installations and the successful performance of our pumps should be sufficient proof of our ability to handle your pumping problems. Our engineering force is at your command.

Have only Lawrence Pumps, manufactured by the

**Lawrence Machine & Pump Company**

**361 Market St. Lawrence, Mass.**

# To THE PAPER MILL SUPERINTENDENT

It is sound economy to generalize in G D C Colors.

Consult our representative—he can offer suggestions.

There is a G D C color for every specialized need.

Current colors are carried in stock at all our offices.

GDC

GENERAL DYESTUFF CORPORATION

230 Fifth Ave. New York, N. Y.

# Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, May 27, 1931.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Contract shipments are moving in fair volume. The pulp is quoted at from $42.50 to $45 per ton. The powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Steadiness prevails in the bleaching powder market. The contract movement is well up to average. Prices are generally holding to schedule. Bleaching powder is quoted at from $2 to $2.35 per 100 pounds, in drums, at works, according to grade.

CASEIN.—The casein market is slightly easier. Domestic standard ground is now quoted at 7 cents and finely ground at 8½ cents per pound. Argentine standard ground is still selling at 9 cents and finely ground at 10 cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Demand for caustic soda is moderately active. Prices are holding to former levels. Solid caustic soda is quoted at from $2.50 to $2.55, while the flake and the ground are selling at from $2.90 to $2.95 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is displaying a steady trend. Contract shipments are moving in fair volume. Imported china clay is still quoted at from $13 to $21 per ton, ship side; while domestic paper making clay is selling at from $7 to $11 per ton, at mine.

CHLORINE.—Conditions in the chlorine market are fairly satisfactory. Shipments against contract are going forward at a normal pace. Prices are steady and unchanged. Chlorine is quoted at $2.50 per 100 pounds, in tanks, or multi-unit cars, in large drums, at works.

ROSIN.—The rosin market is steadier than of late. The grades of gum rosin used in the paper mills are still quoted at from $5.95 to $6.35 per 280 pounds, in barrels, at yards. Wood rosin is selling at $4.30 per 280 pounds, in car lots, at southern shipping points.

SALT CAKE.—Supplies of salt cake are going forward to the paper mills in good volume. Prices are generally unchanged. Salt cake is quoted at from $16 to $17; German Salt Cake at from $15.50 to $16; and chrome salt cake at from $14 to $15 a ton, in bulk, at works.

SODA ASH.—The soda ash market was rather quiet during the past week. Contract shipments, however, continue to move in good volume. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1; in bags, $1.15; and in barrels, $1.38.

STARCH.—Most of the business transacted in the starch market was along routine lines. The contract movement is normal for the season. Prices are unchanged. Special paper making starch is quoted at $2.67, in bags; and at $2.94 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—The sulphate of alumina market is exhibiting a strong undertone. Prices are holding to schedule. Commercial grades are still quoted at from $1.25 to $1.40; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—Business in the sulphur market is fairly active. Sulphur is quoted at $18 per long ton, on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton for any smaller quantity over that period. On spot and nearby car loads, the quotation is $21 per ton.

TALC.—No radical changes were recorded in the talc market. Offerings are sufficient to meet prevailing requirements. Domestic talc is still quoted at from $16 to $18 per ton, in bulk; while imported talc is selling at from $18 to $22 per ton, in bags, ship side.

# Market Quotations

## Paper
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| **Ledgers** | 11.00 | @ | 38.00 |
| **Bonds** | 6.75 | @ | 53.25 |
| **Writings—** | | | |
| Extra Superfine | 14.00 | @ | 32.00 |
| Superfine | 14.00 | @ | 32.00 |
| Tub sized | 10.00 | @ | 15.00 |
| Engine sized | 6.75 | @ | 11.00 |
| **Book, Cased—** | | | |
| S. & S. C. | 5.25 | @ | — |
| M. F. | 5.00 | @ | — |
| Coated and Enamel | 6.75 | @ | 10.25 |
| Lithograph | 7.25 | @ | 11.75 |
| **Tissues—Per Ream—** | | | |
| White No. 1 | .65 | @ | .70 |
| Anti-Tarnish M G only | .65 | @ | .70 |
| Colored | .70 | @ | .90 |
| White No. 2 | .55 | @ | .60 |
| Kraft | .65 | @ | .70 |
| Manila | .55 | @ | .60 |
| **Manila—** | | | |
| No. 1 Jute | 9.00 | @ | 9.25 |
| No. 2 Jute | 7.75 | @ | 8.50 |
| No. 1 Wood | 4.00 | @ | 5.25 |
| No. 2 Wood | 3.50 | @ | 4.00 |
| Butchers | 3.37½ | @ | — |
| **Fibre Papers—** | | | |
| No. 1 Fibre | 4.25 | @ | 5.50 |
| No. 2 Fibre | 4.00 | @ | 4.75 |
| Common Bogus | 1.50 | @ | 3.00 |
| **Screenings** | 2.00 | @ | 3.00 |
| **Card Middles** | 4.00 | @ | 5.00 |
| **Glassine—** | | | |
| Bleached, basis 25 lbs., No. 1 | .09¾ | @ | — |
| No. 2 | .11¾ | @ | — |
| Bleached, basis 20 lbs. | .11¾ | @ | — |

(Delivered New York)

| | | | |
|---|---|---|---|
| **News, per ton—** | | | |
| Rolls, contract | 57.00 | @ | — |
| Rolls, spot | 57.00 | @ | — |
| Sheets | 62.00 | @ | — |
| Side Runs | 42.00 | @ | 46.00 |
| **Kraft—** | | | |
| No. 1 Domestic | 4.25 | @ | 5.30 |
| No. 2 Domestic | 3.50 | @ | 4.00 |
| Southern | 3.50 | @ | 4.00 |
| Imported | 6.00 | @ | 7.00 |
| **Boards—per ton—** | | | |
| News | 32.50 | @ | 35.00 |
| Straw | 40.00 | @ | 45.00 |
| Chip | 30.00 | @ | 32.00 |
| Binders' Boards | 65.00 | @ | 70.00 |
| Standard 85 Test Liner | 32.50 | @ | 35.00 |
| Sgl. Mla. Ll. Chip. (F. o. b. Mill) | 42.50 | @ | 45.00 |
| **Wood Pulp Boards** | 70.00 | @ | 80.00 |

## Mechanical Pulp
(On Dock)

| | | | |
|---|---|---|---|
| **No. 1 Imported—** | | | |
| Moist | 27.00 | @ | 30.00 |
| Dry | 30.00 | @ | 34.00 |

(F. o. b. Mill)

| | | | |
|---|---|---|---|
| No. 1 Domestic | 25.00 | @ | 30.00 |

## Chemical Pulp
(On Dock, Atlantic Ports)

| | | | |
|---|---|---|---|
| **Sulphite (Imported)—** | | | |
| Bleached | 2.60 | @ | 4.00 |
| Easy Bleaching | 2.15 | @ | 2.35 |
| No. 1 strong unbleached | 2.00 | @ | 2.35 |
| Mitscherlich unbleached | 2.10 | @ | 2.70 |
| No. 2 strong unbleached | 1.90 | @ | 2.00 |
| No. 1 Kraft | 1.50 | @ | 1.70 |
| No. 2 Kraft | 1.35 | @ | 1.55 |
| **Sulphate—** | | | |
| Bleached | 2.75 | @ | 3.25 |

(F. o. b. Pulp Mill)

| | | | |
|---|---|---|---|
| **Sulphite (Domestic)—** | | | |
| Bleached | 2.40 | @ | 4.75 |
| Easy Bleaching | 2.55 | @ | 2.75 |
| News | 1.80 | @ | 2.50 |
| Mitscherlich | 2.40 | @ | 3.15 |
| **Kraft (Domestic)** | 1.60 | @ | 2.75 |

Delivered Paper Mills)

| | | | |
|---|---|---|---|
| **Soda Bleached** | 3.00 | @ | — |

## Domestic Rags
New Rags
(Prices to Mill f. o. b N. Y.)

| | | | |
|---|---|---|---|
| **Shirt Cuttings—** | | | |
| New White, No. 1 | 7.00 | @ | 7.45 |
| New White, No. 2 | 6.00 | @ | 6.50 |
| Silesias No. 1 | 5.25 | @ | 5.50 |
| New Unbleached | 7.25 | @ | 7.75 |
| New Blue Prints | 4.00 | @ | 4.50 |
| New Soft Blacks | 3.50 | @ | 4.00 |
| Blue Overall | 5.25 | @ | 5.50 |
| Fancy | 3.75 | @ | 4.00 |
| Washables | 3.50 | @ | 3.75 |
| Mixed Khaki Cuttings | 4.00 | @ | 4.50 |
| **Pink Corset Cuttings** | 6.00 | @ | 6.50 |
| O. D. Khaki Cuttings | 5.00 | @ | 5.25 |
| Men's Corduroy | 3.00 | @ | 3.50 |
| New Mixed Blacks | 3.00 | @ | 3.25 |
| **Old Rags** | | | |
| **White, No. 1—** | | | |
| Repacked | 5.25 | @ | 5.75 |
| Miscellaneous | 4.25 | @ | 4.75 |
| **White, No. 2—** | | | |
| Repacked | 3.00 | @ | 3.50 |
| Miscellaneous | 2.30 | @ | 2.50 |
| St. Soiled, White | 1.50 | @ | 1.75 |
| **Thirds and Blues—** | | | |
| Repacked | 2.25 | @ | 2.50 |
| Miscellaneous | 1.65 | @ | 1.85 |
| **Black Stockings** | 3.25 | @ | 3.75 |
| **Roofing Rags—** | | | |
| Cloth Strippings | 1.25 | @ | 1.30 |
| No. 1 | 1.25 | @ | 1.30 |
| No. 2 | .90 | @ | 1.00 |
| No. 3 | .70 | @ | .80 |
| No. 4 | .65 | @ | .70 |
| No. 5A | .50 | @ | .60 |

## Foreign Rags
New Rags

| | | | |
|---|---|---|---|
| New Dark Cuttings | 2.00 | @ | 2.15 |
| New Mixed Cuttings | 2.10 | @ | 2.40 |
| New Light Silesias | 5.00 | @ | 5.38 |
| Light Flannelettes | 5.00 | @ | 5.25 |
| Unbleached Cuttings | 7.00 | @ | 7.50 |
| New White Cuttings | 6.50 | @ | 6.75 |
| New Light Oxfords | 5.00 | @ | 5.50 |
| New Light Prints | 3.50 | @ | 3.75 |
| **Old Rags** | | | |
| No. 1 White Linens | 6.50 | @ | 6.75 |
| No. 2 White Linens | 5.75 | @ | 5.25 |
| No. 3 White Linens | 4.00 | @ | 4.50 |
| No. 4 White Linens | 2.50 | @ | 3.00 |
| No. 1 White Cotton | 4.50 | @ | 5.00 |
| No. 2 White Cotton | 3.50 | @ | 4.25 |
| No. 3 White Cotton | 2.50 | @ | 3.25 |
| No. 4 White Cotton | 1.50 | @ | 1.75 |
| Extra Light Prints | 2.50 | @ | 2.75 |
| Ord. Light Prints | 2.00 | @ | 2.25 |
| Med. Light Prints | 1.65 | @ | 1.75 |
| Dutch Blue Cottons | 1.80 | @ | 1.90 |
| French Blue Linens | 2.50 | @ | 2.60 |
| **German Blue Linens** | 2.25 | @ | 2.40 |
| German Blue Cottons | 1.75 | @ | 1.85 |
| Checks and Blues | 1.60 | @ | 1.75 |
| Lindsay Garments | 1.10 | @ | 1.20 |
| Dark Cottons | .75 | @ | .80 |
| Old Shopperies | .70 | @ | .75 |
| New Shopperies | .70 | @ | .75 |
| French Blues | 1.80 | @ | 1.90 |

## Old Rope and Bagging
(Prices to Mill f. o. b. N. Y.)

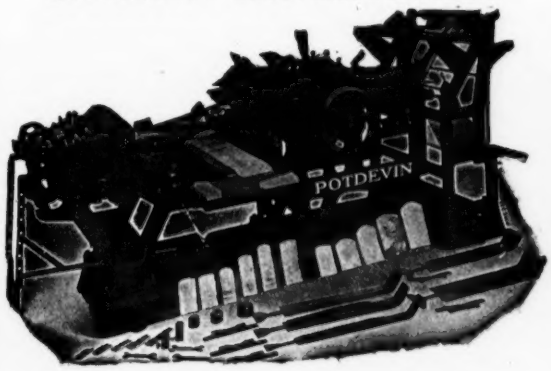
| | | | |
|---|---|---|---|
| **Gunny No. 1—** | | | |
| Foreign | 1.65 | @ | 1.80 |
| Domestic | 1.65 | @ | 1.80 |
| Wool Tares, light | 1.25 | @ | 1.30 |
| Wool Tares, heavy | 1.25 | @ | 1.30 |
| Bright Bagging | 1.20 | @ | 1.30 |
| Small Mixed Rope | .90 | @ | 1.00 |
| **Manila Rope—** | | | |
| Foreign | 2.00 | @ | 2.15 |
| Domestic | 2.10 | @ | 2.25 |
| New Burlap Cut | 1.80 | @ | 1.90 |
| **Hessian Jute Threads—** | | | |
| Foreign | 2.60 | @ | 2.75 |
| Domestic | 2.80 | @ | 3.00 |

## Old Waste Papers
(F. o. b. New York)

| | | | |
|---|---|---|---|
| **Shavings—** | | | |
| Hard, white, No. 1 | 2.75 | @ | 2.85 |
| Hard White, No. 2 | 2.20 | @ | 2.30 |
| Soft, white, No. 1 | 2.20 | @ | 2.30 |
| White envelope cuttings | 2.60 | @ | 2.70 |
| **Flat Stock—** | | | |
| Stitchless | .85 | @ | .95 |
| Overissue Mag | .85 | @ | .95 |
| Solid Flat Book | .75 | @ | .85 |
| Crumpled No. 1 | .60 | @ | .65 |
| Solid Book Ledger | 1.75 | @ | 1.85 |
| Ledger Stock | .80 | @ | .85 |
| **New B. B. Chips** | .20 | @ | .30 |
| **Manilas—** | | | |
| New Env. Cut | 2.00 | @ | 2.20 |
| New Cuttings | 1.50 | @ | 1.65 |
| Extra No. 1 old | 1.20 | @ | 1.30 |
| Print | .50 | @ | .60 |
| Bogus Wrapper | .50 | @ | .60 |
| Container | .25 | @ | .30 |
| **Old Kraft Machine—** | | | |
| Compressed bales | 1.10 | @ | 1.20 |
| **News—** | | | |
| No. 1 White News | 1.60 | @ | 1.70 |
| Strictly Overissue | .40 | @ | .45 |
| Strictly Folded | .30 | @ | .35 |
| No. 1 Mixed Paper | .15 | @ | .25 |
| **Common Paper** | | | Nominal |

NEW **POTDEVIN** PRINTING

SPECIALTY BAG MACHINERY

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40 Other Models

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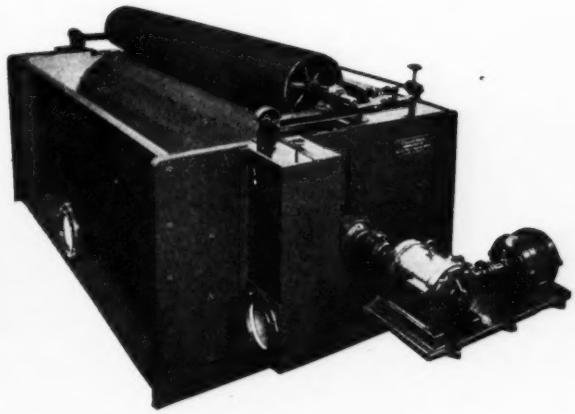

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GLENS FALLS, N. Y.

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FILLERS

Technical service available for coating and loading without charge. Write for samples.

**EDGAR BROS. CO.**
50 CHURCH ST. NEW YORK

### Twines
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Cotton— | | | |
| B. C., 18 basis | .32 | @ | .34 |
| No. 1 | .22 | @ | .24 |
| No. 2 | .21 | @ | .22 |
| No. 3 | .19 | @ | .20 |
| A. Italian, 18 basis | .38 | @ | .39 |
| Finished Jute— | | | |
| Dark 18 basis | .20½ | @ | .21 |
| Light 18 basis | .22½ | @ | — |
| Jute Wrapping, 3-6 Ply— | | | |
| No. 1 | .14¾ | @ | — |
| No. 2 | .13¾ | @ | — |
| Tube Rope— | | | |
| 4-ply and larger | .10¾ | @ | — |
| Fine Tube Rope— | | | |
| 4-ply | .12¾ | @ | — |
| 3-ply | .13¾ | @ | — |
| 2-ply | .14¾ | @ | — |
| Paper Makers Twine | | | |
| Balls | .08¾ | @ | — |
| Box Twine, 2-3 ply | .09 | @ | .10 |
| Jute Rope | .11 | @ | .12 |
| Amer. Hemp, 6 | .29 | @ | .31 |
| Java Sisal | | | |
| No. 1 Basis | .12 | @ | — |
| No. 2 Basis | .11¾ | @ | — |
| New Zealand Sisal | .11½ | @ | — |
| Sisal Lath Yarn— | | | |
| No. 1 | .14 | @ | .16 |
| No. 2 | .12 | @ | .14 |
| Manila Twine | .22½ | @ | .24½ |

## CHICAGO

### Paper
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Rag Bond | .30 | @ | .53¾ |
| Water Marked Sulphite Bond | .09 | @ | .12 |
| Sulphite Bond | .06¾ | @ | .11 |
| Superfine Writing | .18 | @ | .24 |
| No. 1 Fine Writing | .14 | @ | .18 |
| No. 2 Fine Writing | .12 | @ | .14 |
| No. 3 Fine Writing | .08½ | @ | .12 |
| No. 1 M. F. Book | .06½ | @ | .07¾ |
| No. 2 M. F. Book | .05¼ | @ | .06¼ |
| No. 1 S.&S.C. Book | .06¾ | @ | .07¾ |
| No. 2 S.&S.C. Book | .05¾ | @ | .06½ |
| Coated Book | .07½ | @ | .12 |
| Coated Label | .07½ | @ | .10 |
| No. 1 Manila | .04¼ | @ | .05¾ |
| No. 1 Fibre | .04¼ | @ | .05¾ |
| No. 2 Manila | .04¼ | @ | .04¾ |
| Butcher's Manila | .04 | @ | .04½ |
| No. 1 Kraft | 5.00 | @ | 5.50 |
| Southern Kraft | 3.75 | @ | 4.00 |
| No. 2 Kraft | 3.75 | @ | 4.00 |
| Wood Tag Boards | .04¼ | @ | .06¼ |
| Sulphite Screenings | .03 | @ | .03¼ |
| Manila Tissue | .07 | @ | .07¼ |
| White Tissue | .07¼ | @ | .07½ |
| (Delivered Central Territory) | | | |
| News, per ton— | | | |
| Rolls, contract | 62.00 | @ | — |
| Sheets | 67.00 | @ | — |
| Boards, per ton— | | | |
| Plain Chip | 30.00 | @ | 35.00 |
| Solid News | 32.50 | @ | 37.50 |
| Manila Lined Chip | 40.00 | @ | 45.00 |
| Container Lined— | | | |
| 85 Test | 50.00 | @ | 55.00 |
| 200 Test | 55.00 | @ | 60.00 |

### Old Papers
(F. o. b. Chicago)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White | 2.35 | @ | 2.40 |
| White Env. Cuttings | — | @ | — |
| No. 1 Soft Shavings | 2.10 | @ | 2.15 |
| Ledger & Writings | .70 | @ | .75 |
| Solid Books | .75 | @ | .80 |
| Blanks | 1.60 | @ | 1.65 |
| Kraffs | 1.25 | @ | 1.35 |
| New Kraft Cuts | 1.35 | @ | 1.45 |
| Manila Env. Cuts | 1.50 | @ | 1.55 |
| Ex. No. 1 Manila | 1.25 | @ | 1.30 |
| Print Manila | .40 | @ | .45 |
| Overissue News | .40 | @ | .45 |
| Old Newspapers— | | | |
| No. 1 | .35 | @ | .40 |
| No. 2 | .30 | @ | .35 |
| Mixed Papers— | | | |
| No. 1 | .28 | @ | .30 |
| No. 2 | .20 | @ | .25 |
| Roofing Stocks— | | | |
| No. 1 | 30.00 | @ | — |
| No. 2 | 28.00 | @ | — |

## PHILADELPHIA

### Paper
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Bonds | .05 | @ | .40 |
| Ledgers | .07 | @ | .40 |
| Writings— | | | |
| Superfine | .12 | @ | .18 |
| Extra fine | .16 | @ | .22 |
| Fine | .15 | @ | .26 |
| Fine, No. 2 | .13½ | @ | .25 |
| Fine, No. 3 | .08¾ | @ | .20 |
| Book, M. F. | .05 | @ | .07 |
| Book, S. S. & C. | .05 | @ | .07½ |
| Book, Coated | .08 | @ | .16 |
| Coated Lithograph | .07 | @ | .11 |
| Label | .07 | @ | .11 |
| No. 1 Jute Manila | .07 | @ | .09 |
| Manila Sul., No. 1 | .03¼ | @ | .05½ |
| Manila No. 2 | .03 | @ | .04 |
| No. 1 Kraft | .05¼ | @ | .06 |
| No. 2 Kraft | .03½ | @ | .04 |
| Southern Kraft No. 1 | — | @ | .03¼ |
| Southern Kraft No. 2 | — | @ | .03¼ |
| Common Bogus | .03 | @ | .04 |
| (Delivered Philadelphia) | | | |
| News Print Rolls | 62.00 | @ | — |
| Straw Board | 50.00 | @ | — |
| News Board | 32.50 | @ | — |
| Chip Board | 30.00 | @ | — |
| Wood Pulp Board | 85.00 | @ | 95.00 |
| Binder Boards— | | | |
| No. 1, per ton | 75.00 | @ | — |
| No. 2, per ton | 68.00 | @ | — |
| Carload lots | 66.00 | @ | 70.00 |
| Tarred Felts— | | | |
| Regular | 55.50 | @ | 57.00 |
| Slaters (per roll) | .84 | @ | .94 |
| Best Tarred, 1-ply (per roll) | 1.95 | @ | 2.10 |
| Best Tarred, 2-ply (per roll) | 1.50 | @ | 1.60 |
| Best Tarred, 3-ply | 2.00 | @ | 2.25 |

### Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New White, No. 1 | .06 | @ | .07 |
| New White, No. 2 | .05½ | @ | .06 |
| Light Silesias | .05 | @ | .05½ |
| Silesias, No. 1 | .06 | @ | .08 |
| Black Silesias, soft | .05 | @ | — |
| New Unbleached | .06½ | @ | .07 |
| Washable, No. 1 | .03 | @ | .03½ |
| Blue Overall | .05 | @ | .05½ |
| Cottons—According to grades— | | | |
| Washable, No. 2 | .02 | @ | .02½ |
| New Blue | .02 | @ | .02½ |
| Fancy | .03½ | @ | — |
| New Black Soft | .03 | @ | .03½ |
| New Light Seconds | .01¾ | @ | .02 |
| New Dark Seconds | 1.85 | @ | 2.00 |
| Khaki Cuttings— | | | |
| No. 1 O. D. | .04½ | @ | .05 |
| No. 2 Mixed | .03½ | @ | .04 |
| Corduroy | .02½ | @ | .03 |
| New Canvas | .06½ | @ | .07 |
| New Black Mixed. | .03 | @ | .03½ |

### Domestic Rags (Old)

| | | | |
|---|---|---|---|
| White No. 1— | | | |
| Repacked | 3.50 | @ | 4.00 |
| Miscellaneous | 2.50 | @ | 3.00 |
| M. G. | 4.50 | @ | — |
| Thirds and Blues— | | | |
| Miscellaneous | 1.25 | @ | 1.50 |
| Repacked | 1.75 | @ | 2.00 |
| Black Stockings (Export) | 3.80 | @ | 4.00 |
| Roofing Stock— | | | |
| Foreign No. 1 | 1.15 | @ | 1.25 |
| Repacked | .80 | @ | .90 |

### Bagging
(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| Gunny, No. 1— | | | |
| Foreign | 1.50 | @ | 1.60 |
| Domestic | 1.75 | @ | — |
| Manila Rope | 2.50 | @ | 2.75 |
| Sisal Rope | 1.25 | @ | 1.50 |
| Mixed Rope | 1.10 | @ | 1.25 |
| Scrap Burlaps— | | | |
| No. 1 | 1.50 | @ | 1.60 |
| No. 2 | 1.10 | @ | 1.20 |
| Wool Tares, heavy | 3.00 | @ | — |
| Mixed Strings | 1.15 | @ | 1.25 |
| No. 1, New Light Burlap | 2.50 | @ | 2.75 |
| New Burlap Cuttings | 2.00 | @ | 2.25 |

### Old Papers
(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White | 2.50 | @ | 2.60 |
| No. 2 Hard White | 2.10 | @ | 2.25 |
| No. 1 Soft White | 2.15 | @ | 2.25 |
| No. 2 Soft White | 1.35 | @ | 1.50 |
| No. 1 Mixed | .80 | @ | .90 |
| No. 2 Mixed | .55 | @ | .65 |
| Solid Ledger Stock | 1.50 | @ | 1.60 |
| Writing Paper | 1.05 | @ | 1.25 |
| No. 1 Books, heavy | 1.00 | @ | 1.15 |
| No. 2 Books, light | .90 | @ | .95 |
| No. 1 New Manila | 2.15 | @ | 2.30 |
| No. 1 Old Manila | 1.40 | @ | 1.50 |
| Print Manila | .50 | @ | .60 |
| Container Manila | .45 | @ | .50 |
| Old Kraft | 1.15 | @ | 1.20 |
| Common Paper | .25 | @ | .30 |
| No. 1 Mixed Paper | .25 | @ | .30 |
| Straw Board, Chip | .35 | @ | .40 |
| Binders Board, Chip | .35 | @ | .45 |
| Corrugated Board | .50 | @ | .60 |
| Overissue News | .40 | @ | .45 |
| Old Newspaper | .25 | @ | .30 |

## BOSTON

### Paper
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Ledgers— | | | |
| Sulphite | .07½ | @ | .12½ |
| Rag Content | .15 | @ | .30 |
| All Rag | .38 | @ | .52½ |
| Bonds— | | | |
| Sulphite | .06½ | @ | .11½ |
| Rag content | .15 | @ | .30 |
| All rag | .36½ | @ | .65 |
| Writings | .06½ | @ | .20 |
| Superfines | .11 | @ | .31 |
| Book, Super | .06 | @ | .09 |
| Book, M. F. | .05½ | @ | .08½ |
| Book, Coated | .08½ | @ | .18 |
| Coated Litho | .09 | @ | .12 |
| Label | .09½ | @ | .15 |
| Jute Manila No. 1 | .11 | @ | .13 |
| Manila, Sul. No. 1 | .04¾ | @ | .06½ |
| Manila, Sul. No. 2 | .03¾ | @ | .04½ |
| No. 1 Kraft | .04½ | @ | .05½ |
| No. 2 Kraft | 0.3½ | @ | .04¼ |
| (F. o b. Boston) | | | |
| Southern Kraft | .03½ | @ | .03¾ |
| (F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.) | | | |
| Common Bogus | .02 | @ | .02¾ |
| Delivered New England points | | | |
| News Print, rolls | 61.50 | @ | — |
| Straw Board, rolls | .009 | — | @52.50 |
| Straw Board in Sheets, basis 35s to 70s | — | @ | 50.00 |
| Filled News Board | 32.50 | @ | — |
| Chip Board | 30.00 | @ | — |
| Chip Board (Creasing) | 32.50 | @ | — |
| Single Manila Lined Chip | — | @ | 42.50 |
| Single White, Patent Coated News Board | | | |
| Bender, No. 1 | 60.00 | @ | 75.00 |
| Bender, No. 2 | 55.00 | @ | 65.00 |
| Wood Pulp Board | 75.00 | @ | 80.00 |
| Binder Boards | 67.50 | @ | 75.00 |

### Old Papers
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White | 3.25 | @ | 3.75 |
| No. 2 Hard White | 2.60 | @ | 2.90 |
| No. 1 Soft White | 2.25 | @ | 2.40 |
| No. 1 Mixed | .90 | @ | 1.00 |
| No. 2 Mixed | .60 | @ | .65 |
| Solid Ledger Books | 1.75 | @ | 2.00 |
| Overissue Ledger Stock | 1.35 | @ | 1.60 |
| Mixed Ledgers | 1.15 | @ | 1.30 |
| No. 1 Books, heavy | .75 | @ | .90 |
| No. 1 Books, light | .55 | @ | .70 |
| Crumpled Stitchless Book Stock | 1.00 | @ | 1.25 |
| Manila Env. Cuttings | 1.85 | @ | 2.00 |
| No. 1 Old Manila | — | @ | 1.00 |
| White Blank News | 1.50 | @ | 1.60 |
| Kraft No. 1 | — | @ | 1.10 |
| Manila | .80 | @ | .90 |
| No. 1 Mixed Paper | — | @ | .16 |
| Overissue News | — | @ | .40 |
| Old Newspapers | .25 | @ | .30 |
| Box Board, Chip | .16 | @ | .20 |
| Corrugated Boxes | .35 | @ | .45 |

### Bagging
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Gunny No. 1— | | | |
| Foreign | — | @ | 1.80 |
| Domestic | 1.60 | @ | 1.70 |
| Manila Rope— | | | |
| Foreign | — | @ | 2.00 |
| Domestic | 2.50 | @ | — |
| Transmission Rope | 1.75 | @ | — |
| Mixed Strings | — | @ | .70 |
| Jute Rope | 1.25 | @ | — |
| Jute Carpet Threads | .90 | @ | 1.05 |
| Bleachery Burlap | — | @ | 3.25 |
| No. 1 Scrap Burlap | — | @ | 1.25 |
| Scrap Sisal | 1.40 | @ | 1.50 |
| Scrap Sisal for shredding | 1.50 | @ | 1.60 |
| Wool Tares, heavy | 1.30 | @ | — |
| New Burlap Cutting | 1.75 | @ | 2.00 |
| Australian Pouches | 2.50 | @ | — |
| Heavy Baling Bagging | — | @ | 1.75 |
| Paper Mill Bagging | .95 | @ | 1.10 |
| Bagging No. 2 | .50 | @ | — |
| No. 1 Burlap | — | @ | 3.50 |

### Domestic Rags (New)
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New White No. 1 | .06½ | @ | .07 |
| New White No. 2 | — | @ | .06 |
| Silesias No. 1 | .06 | @ | .06½ |
| New Black Silesias | .02½ | @ | .02¾ |
| New Unbleached | — | @ | .08 |
| Fancy | .04 | @ | .04½ |
| Washable | .04 | @ | .04½ |
| Cottons—According to grades | | | |
| Blue Overalls | .05 | @ | .06 |
| New Black, soft | .04 | @ | .04¼ |
| Knaki Cuttings | .04 | @ | .04¼ |
| O. D. Khaki | .04½ | @ | .05 |
| Corduroy | .03 | @ | .03½ |
| New Canvas | .08 | @ | .08½ |

### Domestic Rags (Old)
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Canvas | .04½ | @ | — |
| White No. 1— | | | |
| Repacked | 4.75 | @ | 5.25 |
| Miscellaneous | — | @ | 4.00 |
| White No. 2— | | | |
| Repacked | .04½ | @ | .05 |
| Miscellaneous | .03½ | @ | .04 |
| Twos and Blues | 2.50 | @ | 2.75 |
| Thirds and Blues— | | | |
| Repacked | 1.60 | @ | 1.80 |
| Miscellaneous | 1.00 | @ | 1.20 |
| Black Stockings | 3.25 | @ | 3.50 |
| Roofing Stock— | | | |
| No. 1 | .75 | @ | .80 |
| No. 2 | .65 | @ | .70 |
| No. 3 | .50 | @ | .60 |

### Foreign Rags
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Dark Cottons | — | @ | .75 |
| New No. 1 White Shirt Cuttings | 7.75 | @ | 8.00 |
| Dutch Blues | — | @ | 1.80 |
| New Checks & Blues | 4.00 | @ | 4.50 |
| Old Fustians | 1.65 | @ | 1.75 |
| Old Linsey Garments | .85 | @ | .95 |

## TORONTO

### Paper
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Bond— | | | |
| No. 1 Sulphite | .12½ | @ | — |
| No. 2 Sulphite | .09¾ | @ | — |
| No. 1 Colored | .13½ | @ | — |
| No. 2 Colored | .09½ | @ | .10½ |
| Ledgers (sulphite) | — | @ | — |
| Ledgers, No. 1 | .36 | @ | — |
| Ledgers, No. 2 | .27 | @ | — |
| Writing | .09½ | @ | .10 |
| Book— | | | |
| No. 1 M. F. (carloads) | 7.12½ | @ | 7.60 |
| No. 2 M. F. (carloads) | 6.90 | @ | 7.35 |
| No. 3 M. F. (carloads) | 6.65 | @ | 7.15 |
| No. 1 S. C. (carloads) | 7.60 | @ | 8.10 |
| No. 2 S. C. (carloads) | 7.35 | @ | 7.85 |
| No. 3 S. C. (carloads) | 7.12½ | @ | 7.60 |
| No. 4 S. C. (carloads) | 5.95 | @ | 6.40 |
| No. 1 Coated and Litho | 13.25 | @ | — |
| No. 2 Coated and Litho | 12.25 | @ | — |
| No. 3 Coated and Litho | 10.00 | @ | 11.50 |
| Coated tinted | 14.50 | @ | — |
| Wrapping— | | | |
| Rag Brown | 4.95 | @ | — |
| White Wrap | 5.25 | @ | — |
| "B" Manila | 5.00 | @ | — |
| No. 1 Manila | 5.40 | @ | — |
| Fiber | 5.40 | @ | — |
| Kraft, M. F. | 5.90 | @ | — |
| Kraft No. 2 | 5.40 | @ | — |
| (Delivered Toronto) | | | |
| News, per ton— | | | |
| Rolls (contract) | 61.50 | @ | 62.00 |
| Sheets | 67.00 | @ | — |

### Pulp
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Ground Wood | 30.00 | @ | 32.00 |
| Sulphite easy bleaching | 50.00 | @ | — |
| Sulphite, news grade | 70.00 | @ | — |
| Sulphite, bleached | 72.50 | @ | 75.00 |
| Sulphate | 60.00 | @ | — |

### Old Waste Paper
(In carload lots, f. o. b. Toronto)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| White Env. Cut | 2.80 | @ | — |
| Soft White | 2.60 | @ | — |
| White Blk. News | 1.50 | @ | — |
| Book and Ledger— | | | |
| Flat Magazine and Book Stock (old) | 1.10 | @ | — |
| Light and Crumpled Book Stock | 1.20 | @ | — |
| Ledgers and Writings | — | @ | — |
| Manilas— | | | |
| New Manila Cut | 1.50 | @ | — |
| Printed Manilas | .80 | @ | — |
| Kraft | 1.90 | @ | — |
| News and Scrap— | | | |
| Strictly Overissue | .70 | @ | — |
| Strictly Folded | .70 | @ | — |
| No. 1 Mixed Paper | .60 | @ | — |

### Domestic Rags
(Price to mills, f. o. b. Toronto)

| | | | |
|---|---|---|---|
| No. 1 White Shirt Cuttings | .09½ | @ | .10 |
| Fancy Shirt Cuttings | .06 | @ | .06¼ |

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# PAPER TRADE JOURNAL

ESTABLISHED 1872

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